



NAIRTL

National Academy for integrating
Research, Teaching and Learning

*Acadamh Náisiúnta um Chomhtháthú
Taighde, Teagaisc agus Foghlama*

FLEXIBLE LEARNING

PROCEEDINGS OF THE NATIONAL ACADEMY'S FOURTH ANNUAL CONFERENCE



Designed and collated by Catherine O'Mahony

This conference was organised in collaboration with LIN



FLEXIBLE LEARNING

About this publication:

In the spirit of the conference theme it was decided to publish the proceedings as an extension of the book of abstracts of keynote presentations, parallel paper presentations and poster exhibitions. The keynote presentations can be accessed via hyperlinks as video recordings. All conference presenters were invited to submit a conference paper and those that have been received to date, in addition to the videos for those papers that were recorded during the conference, can be accessed via a hyperlink at the end of the paper abstract. Authors were encouraged to have their papers peer-reviewed. Where papers have been peer reviewed, this is reflected.

Designed and collated by: Catherine O'Mahony, NAIRTL

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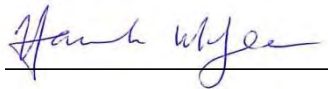
FOREWORD

On behalf of the Royal College of Surgeons in Ireland, I am delighted to welcome you to RCSI for the 2010 NAIRTL conference. 2010 is a special year for us as we celebrate 200 years since we first opened our doors to education at No 123, St Stephens Green. Two centuries later we have a very multicultural educational environment, with students from over 60 countries here in any given academic year – and with others at overseas campuses in Bahrain, Penang and Dubai. As educators of health professionals – medical, pharmacy, physiotherapy, nursing and postgraduate research and healthcare management students - the theme of this year's conference "*Flexible Learning*" is very appropriate to our goals.



We look forward to two days of sharing ideas and experiences to enable us as educators to undertake innovative approaches to curriculum design and course implementation, to better support learners and meet the challenges of flexible learning. We hope you find the environment, programme content and general collegiality of the conference to be a boost to your work and a way to meet new stimulating and inspiring colleagues in the Irish education sector.

Best wishes,

A handwritten signature in blue ink, which appears to read "Hannah McGee". The signature is written in a cursive style and is positioned above a horizontal line.

Professor Hannah McGee

Dean, Faculty of Medicine & Health Sciences, RCSI.

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Part 1:

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THE OPEN EDUCATION REVOLUTION

Contributor: Richard Baraniuk, Founder of Connexions and Victor E. Cameron Professor of Electrical and Computer Engineering, Rice University

BIOGRAPHICAL NOTE

Richard Baraniuk is the Victor E. Cameron Professor of Electrical and Computer Engineering at Rice University and the founder of Connexions (www.cnx.org). For his research in signal processing, he has received national research awards from the National Science Foundation and the Office of Naval Research. He has also received the Rosenbaum Fellowship from the Isaac Newton Institute of Cambridge University, the ECE Young Alumni Achievement Award from the University of Illinois, the SPIE Wavelet Pioneer Award, an MIT Technology Review TR10 Top 10 Emerging Technology award, and several best paper awards.



For his education projects, he has received the Eta Kappa Nu C. Holmes MacDonald National Outstanding Teaching Award, the Tech Museum Laureate Award, the Internet Pioneer Award from the Berkman Center for Internet and Society at Harvard Law School, and the World Technology Network Education Award. He has been selected as one of Edutopia Magazine's Daring Dozen Education Innovators and elected a Fellow of IEEE and AAAS.

ABSTRACT

A grassroots movement is sweeping through the academic world. The "open access movement" is based on a set of intuitions that are shared by a remarkably wide range of academics: that knowledge should be free and open to use and re-use; that collaboration should be easier, not harder; that people should receive credit and kudos for contributing to education and research; and that concepts and ideas are linked in unusual and surprising ways and not the simple linear forms that traditional media present. In this talk, I will overview the past, present, and future of the open access education movement in the context of Connexions (cnx.org), which invites authors, educators, and learners worldwide to "create, rip, mix, and burn" textbooks, courses, and learning materials from a global open-access repository.

[Link to Video of Professor Baraniuk's Keynote Presentation](#)

FLEXIBLE LEARNING: THE EUROPEAN CONTEXT

Contributor: Michael Hörig, Policy officer in the Higher Education Policy Unit at the European University Association, European University Association

BIOGRAPHICAL NOTE

Michael Hörig joined EUA in October 2006. As a Programme Manager in the Higher Education Policy Unit, he is in charge of policy on widening access, lifelong learning, qualifications frameworks, innovative teaching and the Bologna Process. He currently manages the 'Shaping Inclusive and Responsive University Strategies' project and is closely involved with the implementation of the 'Access to Success: Fostering trust and exchange between Europe and Africa' project.



Previous to his function at EUA, Michael Hörig was involved in ESIB – the National Unions of Students in Europe (now ESU), representing the students' interests in the Bologna Process. He also worked for 3 years as a communication and international officer at the National Union of Students in Flanders. Michael Hörig has a Master level degree in Political Science, International Relations, from Ghent University, Belgium, and also studied at Stockholm University, Sweden.

ABSTRACT

The higher education landscape in Europe has changed considerably in the last decade. Not only did the Bologna Process introduce a new degree structure and matching supporting tools, the overall context has changed as well, with a significant increase in both student numbers and higher education institutions.

Universities are increasingly aware of the need to strengthen their lifelong learning (LLL) strategies, which is expressed for example in the 2008 European Universities' Charter on LLL and the EUA follow up project 'Shaping Inclusive and Responsive University Strategies.' This increased awareness to view higher education from a LLL perspective appears to fit well with the policy emphasis that has been placed on LLL in recent years. However, there are still considerable barriers to be removed in order for universities to contribute to this agenda more effectively. Universities' discussions on LLL provision should go beyond continuing education provision and focus also on other LLL activities and flexible provision of current education programmes. What are then the consequences of attracting new types of students on flexible learning paths? Also, do new paradigms in teaching and learning require more flexible learning possibilities?

This presentation will focus on both the policy objectives spelled out at the European level, while providing evidence from the recent Trends 2010 report, examples of concrete problems and suggestions for possible solutions.

[Link to Video of Michael Hörig's Keynote Presentation](#)

Part 2:
Conference Paper Presentations on
Technology Enhanced Learning

Wednesday 10h 20 - O'Flanagan Theatre

THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN IRISH LANGUAGE LEARNING AND TEACHING: WIMBA VOICE TOOLS AS GAEILGE

Rióna Ní Fhrighil, St Patrick's College, Drumcondra

The application of technology to language teaching and learning is arguably the most prevalent topic of research and debate in language pedagogy. Indeed, Klapper contends that the application of information and communication technologies (ICT) in language pedagogy 'is certainly the most rapidly changing area' (2006: 181). In the context of Irish-language teaching and learning at third level, the desire to exploit the affordances of relevant learning technologies, has recently been identified as priorities on an inter-institutional basis (Ní Fhrighil & Nic Eoin 2009). It is within this context that the author carried out the research on which the proposed conference paper will be based.

This paper will report the findings of a case-study which explored the possible uses of voice-based asynchronous communication technology, namely Wimba Voice Tools, in the teaching and learning of the Irish language at Third Level, specifically in St. Patrick's College, Drumcondra. This research, initially undertaken in 2008 and repeated in 2009 and 2010, involved a quantitative examination of speech-data to determine the effectiveness of Wimba Voice Tools as a teaching resource aimed at improving students' oral skills in Irish; particularly fluency skills. This research also involved a qualitative examination of students' reactions to and evaluations of Wimba Voice Tools as a teaching and learning resource. The results of both quantitative and qualitative research methods will be presented and discussed within the parameters of language-learner autonomy theory.

Wednesday 10h 28 - O'Flanagan Theatre

A FRAMEWORK FOR THE COMPARISON OF VIRTUAL CLASSROOM SYSTEMS

Daniel McSweeney, Institute of Technology, Blanchardstown

The increase in demand for open and distance learning has resulted in many higher education providers investing in virtual classroom systems. These systems can be an essential component in the delivery of flexible and online courses. While many institutions correctly place a greater emphasis on the pedagogical development of flexible courses, poor selection or implementation of virtual classroom software can reduce the pedagogical effectiveness of such courses and in some cases render them unworkable for both lecturing staff and students.

Changes in vendor offerings, the continual evolution of end user technology, developments in mobile devices and improvements in internet infrastructure and services have resulted in need for continuous evaluation of virtual classroom systems and their capabilities to provide ideal environments for teaching and learning.

This paper provides a comparative analysis of two such virtual classroom systems (Adobe Connect 7 and Microsoft Office Live Meeting 2007) and examines their suitability in meeting

both pedagogical and technological needs in Irish higher education. In doing so it suggests a comparative framework for other institutions engaged in the evaluation of virtual classroom systems.

[Link to Paper](#) [Link to Video of Presentation](#)

Wednesday 10h 36 - O'Flanagan Theatre

E-PORTFOLIO FOR LANGUAGE AND INTERCULTURAL LEARNING: THE LOLIPOP EXPERIENCE

Fionnuala Kennedy, Waterford Institute of Technology

This paper traces the development of an electronic version of the European Language Portfolio, the Socrates-Lingua funded Language on-line portfolio project (LOLIPOP - <http://lolipop-portfolio.eu/>) and its integration in undergraduate Language and Intercultural modules at Waterford Institute of Technology.

The paper will outline the principles of an educational portfolio as a means of collecting, reflecting, selecting and presenting, and will demonstrate the salient features of an e-Portfolio over a paper version, such as portability, accessibility and interactivity. This will be followed by an introduction to the European Language Portfolio (ELP) and its three components: Passport, Biography and Dossier. How LOLIPOP has developed an eELP, which combines self-assessment, reflection and development of learner autonomy with an enhanced intercultural dimension will be highlighted.

The LOLIPOP Portfolio has created an environment that supports learners' deep learning, reflection and collaboration in language learning and intercultural contexts. This provides opportunities for goal-setting and access to a wide-range of learning resources, which can accommodate different learning preferences to be used in a variety of contexts, at different stages of learning and independent of time and place. LOLIPOP provides a framework for a more autonomous form of course delivery, whilst at the same time providing a bridge to classroom learning and supporting lifelong learning. The paper will also describe how the portfolio was used for creation of virtual intercultural spaces for collaboration between language learners in HE institutions in Europe.

A key component of the paper will be based on analysis of student feedback over three years since the conclusion and implementation of the LOLIPOP project in 2007. This indicates that students found the engagement with the LOLIPOP ELP enjoyable and of benefit to their language and intercultural learning. The concept of reflection and self-assessment was reported to be new, challenging, but generally rewarding.

[Link to Paper](#) [Link to Video of Presentation](#)

Wednesday 10h 44 - O'Flanagan Theatre

REVIEW OF COMMON SYNCHRONOUS, LIVE ONLINE-CLASSROOM TOOLS

Arnold Hensman, Institute of Technology, Blanchardstown

While virtual learning environments (VLEs) such as Moodle and WebCT are now ubiquitous in most higher education institutes, live synchronous virtual-classroom software is merely gaining in popularity. The first online-meeting tools were tailored towards business requirements for remotely held meetings rather than educational purposes. The recent expansion of virtual-classroom tools specific to education has changed this. Such software offers the standard features of streamed voice and video, yet is purposely designed with an array of additional features for use as an effective way to conduct classes online. While VLEs work optimally as a compliment to standard courses, Virtual-classrooms such as Adobe Connect Pro and Elluminate have the potential to transform distance education beyond previous limitations.

Since these tools are being used more and more within higher education, questions must be asked about how effective they ultimately can be in meeting learning requirements. More importantly, what are the best teaching and learning practices employed when conducting classes online in this way? This paper makes a comparative review of some of the most popular virtual-classroom tools in terms of what features they offer to educators and students in higher education.

A list of criteria crucial to any one of these tools is compiled and a selection of the most popular are reviewed according to how well they meet these requirements. Certain obstacles and restrictions that arise are discussed with a view to identify and overcome them. Furthermore, opportunities are explored as to how virtual-classrooms might actively enhance teaching and learning rather than merely simulating it on the web. Along with a specific review of technical features, some observations are made as to how some general features of these tools, such as instant messaging, might be enhanced to suit proven pedagogies, such as problem based and collaborative learning.

[Link to Paper](#) [Link to Video of Presentation](#)

Wednesday 10h 52 - O'Flanagan Theatre

GETTING THERE FROM HERE: LEARNING TO USE READILY AVAILABLE TECHNOLOGIES TO ENGAGE LEARNERS AND ENHANCE LEARNING

Liam Boyle, Limerick Institute of Technology

With information and communications technologies (ICT) ubiquitous in contemporary society, it is natural that educators in higher education should seek to harness these technologies to support student learning. For example, web technologies facilitate communication and make vast information resources and online tools readily available at the click of a mouse. Benefits for learners include flexibility about where and when they access learning materials, while allowing for a level of interactivity and immediacy not previously

possible for distance learners. Web resources can also enrich classroom learning by adding vibrancy and vividness to classroom topics. Effective use of ICT can help develop skills of independent learning and promote critical engagement with course topics.

This paper describes a 10-Credit Level 9 module developed to address the professional development needs of teachers in higher education who wish to make better use of ICT in their teaching. Rather than produce learning technologists, the aim is to help working teachers to identify pedagogical advantages of these technologies and equip them with skills and knowledge to harness technology to their own teaching needs.

While teaching staff in higher education increasingly recognise the benefits that these technologies offer, they may be disinclined to engage with them due to uncertainty about how to leverage these benefits. They have little time to devote to figuring out how to do so, and have access to, at best, only meagre institutional resources to support their efforts. Cognisant of these limitations, participants in this module work with readily available tools and learn to build on the skills that they already possess. The module is delivered using flexible methods so that participants can work around their teaching schedules and the delivery models some of the methods it seeks to teach. Pilot delivery of this module has been completed and an evaluation of the pilot will be discussed.

[Link to Video of Presentation](#)

Wednesday 10h 20 - Tutorial Room 2 & 3

THE PERCEIVED IMPACT OF PEER EDUCATION ON AN OCCUPATIONAL THERAPY STUDENT COHORT

Clodagh Nolan, Carmel Lalor and Paula Lynch, Trinity College Dublin

Peer education as a learning method was first introduced into the occupational therapy curriculum in 1996. It aims to engage the student as an active self directed learner and provides an opportunity for the students to develop skills which complement their knowledge of theory and skills previously gained within the course. In October 2007 a study was undertaken to investigate the impact of the peer education course on participating Occupational Therapy students (peer learners and peer educators). This study also aimed 1. to investigate if the stated knowledge, skills, attitudes and aims of the peer learners modules were met 2. to investigate the impact on the peer educators' professional development 3. to explore the subjective experience of participation in the Peer Education module for both peer learners and peer educators. A mixed method approach incorporating both quantitative and qualitative methods was used to answer the research questions. The participants targeted for inclusion in the study were the first and third year students participating in the peer education course. Purposely designed questionnaires were used to, investigate if the aims of the peer learners' modules were met and measure the impact on the peer educators' professional development. Focus groups were also used with both groups to explore their subjective experiences with this module. The results of this study demonstrated that the aims of each peer learner modules (facilitated by the peer educators) were successfully met with overall rates of achievement from 86-97%. The focus groups found that the students felt peer education created a more positive learning environment in

comparison to traditional didactic approaches and students were able to integrate their new knowledge with their practice education.

Wednesday 10h 28 - Tutorial Room 2 & 3

A STUDENT-LED APPROACH TO PERSONAL AND PROFESSIONAL DEVELOPMENT: A CASE STUDY OF A LEVEL 9 MODULE IN PROFESSIONAL DEVELOPMENT AND EFFECTIVENESS FOR GRADUATE ENGINEERS

Carol O'Byrne, Waterford Institute of Technology

This paper presents a case study of a module which aims to integrate academic learning and 'real world' professional experience in a manner that is personally relevant to each individual student. The 'Professional Development and Effectiveness' module is offered to part-time and full-time students on a number of Level 9 Engineering programmes in an Institute of Technology.

The delivery of the module involves a number of interactive classroom sessions designed to provide students with a set of theoretical tools with which to analyse and reflect on, understand and learn from practical experiences in the workplace. With the help of these tools, students are required to work independently to analyse their own past and current professional practice and to identify key strengths and weaknesses in that practice, then to construct and implement individual professional development plans to enhance future practice. The students' experiences at the various stages of this process (analysis of current practice, creation and implementation of development plans and evaluation of progress) are recorded using learning logs and reflective writing exercises which constitute the assessed component of the module.

This module provides students with both tools with which and a space in which to reflect on their personal professional practice and to take control of their own professional development. The classroom sessions are discursive in nature and allow for flexible exploration of concepts and theories which can be used in the practice of development planning and evaluation. While the structure for the assessed work is common to all students, the content of this work (ie the development areas chosen) is entirely flexible and is negotiated between the lecturer and each individual student as part of an ongoing process of one-to-one interaction, conducted mainly in the virtual learning environment, that continues for the duration of the module.

Wednesday 10h 36 - Tutorial Room 2 & 3

INTERDISCIPLINARY STUDY AND INTEGRATIVE LEARNING – A SEARCH FOR EVIDENCE

Aileen Malone, University College Cork

An interdisciplinary field is a field of study that crosses traditional disciplinary boundaries. In 1995 U.C.C. became the first University in Ireland to introduce a BA in Early Childhood Studies (BAECS), provided by Applied Social Studies, Applied Psychology, Education and Paediatrics and Child health working together in partnership.

Recognising that addressing one aspect of childhood was insufficient, and that the vision of all disciplines needed to be understood and appreciated, we worked towards integrative learning possibly without explicitly acknowledging that goal and gradually came out from behind our disciplinary shields.

The question: Is there evidence of integrative learning within the child health research project of the BAECS. In the opinion of the teachers what barriers exist to integrative assessment?

The enquiry: Content analysis of the subject matter of titles and abstracts of a sample of projects from 2008-2010 (180 in total) reviewed selected from those available. Looking for themes of health, psychology, applied social and education in the manifest and latent content. Exploration of their opinion of barriers to integrative assessment as experienced by three teachers.

Results: Some learners were integrating material from different disciplines without explicit instruction. Mature learners, those with prior experience with children and those achieving higher overall marks for this assessment showed greater evidence of integration. These students did not necessarily achieve high marks in other assessments. The primary barrier to integrative assessment was felt to be the modular structure and attendant FTE.

Conclusions. Learners are capable of integration, student characteristics of prior experience and maturity make integrative learning more apparent. More conventional assessment either may not allow learners to show evidence of a capacity to integrate or may not value it. Existing modular structures and "ownership" may limit the capacity for integrative assessment.

Wednesday 10h 44 - Tutorial Room 2 & 3

LINKING ASSESSMENT METHODS WITH INNOVATIVE TEACHING AND LEARNING STRATEGIES IN POSTGRADUATE NURSING EDUCATION

Lorraine Murphy, Health Service Executive, South, and Frances Finn, Waterford Institute of Technology

Much of the work students undertake and their approach to learning is often driven by the method of assessment (Rust, 2002) and therefore must be effectively linked to teaching and learning methods to motivate students. Programmes assessment modes should offer variety and balance in assessment processes (HETAC, 2009), however the choice of assessment must consider the module learning outcomes and the most appropriate method of determining the level at which the students have achieved them. Clear guidelines and criteria for assessment are essential yet providing for a degree of student choice in the provision of evidence that demonstrates achievement of learning outcomes can simultaneously increase student motivation.

The aim of this project was to develop a curriculum underpinned by innovative teaching and learning strategies that were linked to student centred assessment methods that would not only develop the student competence but enable them to develop their clinical practice through enquiry and practice based learning. This was undertaken within a collaborative partnership between the Department of Nursing, WIT and key stakeholders from the Health Service Executive. Specific objectives were to

1. Develop clinical practice modules based on enquiry and practice based learning supported through clinical and academic supervision within a tripartite system of support.
2. Develop a framework that would facilitate competency assessment and development of a qualified practitioner within a specialist area of practice.
3. Develop assessment strategies that would support, enable and provide evidence of learning and competency development through these mechanisms.

This project involved the development and implementation of enquiry and practice based teaching and learning strategies; competency development and assessment frameworks; and innovative assessment tools and mechanisms. This paper outlines the process and outcome of this innovative and flexible curriculum, highlighting the impact on student and practice.

References

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Wednesday 10h 52 - Tutorial Room 2 & 3

MAKING CONNECTIONS: THE USE OF ETHNOGRAPHIC FIELDWORK TO FACILITATE A MODEL OF INTEGRATIVE LEARNING

Michelle Finnerty, University College Cork

This presentation will outline an approach to curricular design that was created to facilitate the increasing needs of students in the context of music education studies at the School of Music, University College Cork. In a response to the increasing desire of students to engage in a learning environment that facilitated the development of skills that relate to their own interests in teaching in various formal and informal contexts, a flexible curriculum design with particular focus on the use of ethnographic fieldwork method within the assessment strategy was developed.

Throughout the module, students were encouraged to investigate areas of interest in formal and informal music education settings. The research assessment encouraged students to try and utilise their experience and engage in a deeper learning experience in the area of interest. Through the use of continuous assessment research paper and facilitation of ethnographic fieldwork within this assessment strategy, students were able to develop multiple connections between new and previous experiences.

This poster will outline how the use of ethnographic fieldwork method and continuous assessment promoted an integrative learning experience allowing interconnections between the course topics within the module and connections with learning and skills outside. The poster will reveal how ethnographic fieldwork emerged as an important method of facilitating students to develop connections between learning within the university and the outside world.

Wednesday 10h 20 - Houston Theatre

GUIDING STUDENT LEARNING USING PROGRAMMED RESEARCH PROJECTS

Oisín Keely, Michael Carty, Iain MacLabhrainn, and Andrew Flaus, National University of Ireland, Galway

The honours year project is the marquee feature of research-led teaching in the experimental sciences. Final year undergraduate students complete an individual research work in an active research group over several months to investigate a unique scientific question.

This challenges students as they transition from structured teaching laboratory exercises to genuine open-ended research, which requires mastering a variety of techniques to draw a meaningful conclusion. The growth in 3rd level participation and 4 year courses makes traditional immersive projects overwhelming for increasing numbers of students. At the same time, supervisors and facilities under pressure for research outputs have less time for mentoring.

To address this problem, we have been developing the concept of a 'programmed research project' derived from a topic of local expertise and interest which retains flexible, student-driven end-points. The techniques and steps in the project are clearly defined to facilitate efficient supervision using timetabled sessions with small workgroups.

In the programmed project, students express and purify individually chosen mutants of jellyfish green fluorescent protein (GFP) predicted to have altered fluorescent properties by performing a range of contemporary molecular biology and protein biochemistry techniques. At the same time, they worked together to build an all-atom scale model of GFP starting from its sequence.

The initial project cycle was highly successful for the students involved from a teaching and learning perspective, and led to insights into GFP properties for local researchers. The kinesthetic aspect of model building and direct visual impact of working with coloured proteins was an important feature of the learning opportunity.

This initiative addresses the research-teaching interface, and demonstrates how a programmed approach can deliver efficient teaching without compromising on the fundamental discovery aspect of a research project.

Wednesday 10h 28 - Houston Theatre

SOCIAL WORK WITHIN A COMMUNITY DISCOURSE; INTEGRATING RESEARCH, TEACHING AND LEARNING ON THE MASTER OF SOCIAL WORK (MSW) PROGRAMME

Catherine Forde and Deborah Lynch, University College Cork

This paper presents the outcomes of a one-year NAIRTL-funded project aimed at strengthening the links between theory, research and practice for teaching and learning on the Master of Social Work (MSW) programme at UCC. The project, which was informed by our primary research into social workers' use of the community work discourse in their practice,

integrates the research findings into a resource for use in the teaching of a community work module on the MSW programme. The purpose of the resource is to facilitate student engagement with the contemporary practice dilemmas and themes that emerged from our research. The resource utilises written and audio material derived from 15 qualitative interviews with social workers practising in different contexts. The material is used for both teaching and assessment purposes within the context of an enquiry-based learning approach.

This paper will discuss the research process and key findings, explore how we involved first year MSW students as stakeholders in the development of the teaching and learning resource, and present selected elements of the resource.

We will illustrate how the integration of research and teaching has impacted significantly and positively on our teaching practice and fostered an approach that is 'student-centred, negotiated, discursive and reflexive' (Brew, 1999, p. 296) and based on the development of students as active participants rather than passive learners.

Brew, A. (1999) 'Research and Teaching: Changing Relationships in a Changing Context', *Studies in Higher Education*, 24(3), pp. 291-301.

Wednesday 10h 36 - Houston Theatre

THE BUILDING EXPERTISE IN SCIENCE TEACHING (BEST) PROJECT

Cliona Murphy, Janet Varley and Paula Kilfeather, St Patrick's College, Drumcondra

This paper reports on the Building Expertise in Science Teaching (BEST) project*, that was aimed at developing student and practising teachers' confidence, competence and interest in teaching science. The intervention brought together two innovative teaching methodologies: explicitly teaching about Nature of Science (NoS), (Murphy, 2008 & Murphy, Murphy and Kilfeather, 2010); and teaching collaboratively ('coteaching') (Murphy, Beggs and Carlisle, 2008). Over the course of the project both student and practising primary teachers were provided with opportunities to develop their conceptual and pedagogical knowledge of NoS through an innovative and interactive inquiry based science programme. The programme provided participants with opportunities to learn and practical ideas to teach about what science is, how scientists work, the history of ideas in science and the impact these ideas have had on, and continue to have on society today. In addition to experiencing the BEST methodologies both student and practising teachers were provided with opportunities to teach collaboratively (coteach). While coteaching the inquiry-based pedagogical ideas experienced throughout the programme were utilised.

Open-ended questionnaires were administered to the participants at the beginning and end of the programme. These questionnaires sought to establish the extent to which the project had impacted on their experiences of and attitudes towards teaching science. The participants also completed a reflective journal each week over the course of the co-teaching placements. These journals provide invaluable insights into the participants' experiences and attitudes regarding co-teaching the nature of science in the primary classroom. In this presentation an overview of the project will be provided and the findings regarding the impact the project had on the student and practising primary teachers' experiences of and attitudes towards teaching about NoS will be presented. The significance of the findings of

this study will be considered in light of the findings and recommendations from recent national and international reports on inquiry-based approaches in science education.

*This project was generously funded by the National Academy for Integration of Research, Teaching and Learning (NAIRTL) and the Centre for the Advancement of Science and Mathematics Teaching and Learning (CASTeL).

Wednesday 10h 44 - Houston Theatre

DEVELOPING TEACHING IN AN INSTITUTE OF TECHNOLOGY

Marion Palmer, Dún Laoghaire Institute of Art, Design and Technology

Developing teaching and learning within higher education is challenging, both at policy level and with lecturers. This paper examines how one Institute of Technology has developed teaching and learning. The process started with a focus on elearning. This led to the setting up of an eLearning Interest Group and subsequently to an eLearning Steering Group reporting to the institute executive. Parallel to the development of elearning there was an ad hoc group on learning and teaching. Subsequently a Teaching and Learning sub-committee of Academic Council was set up.

The work of the Committee e.g. policy development, staff development workshops and the introduction of an accredited programme, is outlined and critiqued. The development of the Committee from its inception in 2006 to 2010 is charted. Key steps on the journey are examined, such as the allocation of a small budget in 2007, the development of the Learning, Teaching and Assessment Strategy in 2008 and the reporting of the eLearning Steering Group to the Committee in 2008. The role of the Committee in implementing policy such as the Learning, Teaching and Assessment policy is assessed.

Parallel to this consideration of the work of the Committee, practical teaching, learning and assessment projects are discussed and examples presented from the institute. The communication of these innovations through teaching and learning conferences and internally within the institute is reviewed. The overlapping influences of technology enhanced teaching and a range of innovations in learning teaching and assessment are analysed. The role of relevant SIF teaching and learning projects, both in terms of focus and funding, is considered.

The impact of the policy development and practical initiatives on staff and student learning is discussed. The current position of teaching and learning, both formally and informally, within the institute is identified and suggestions made for its future path.

Since 2006 there have been many initiatives

- developing teaching at institute level
- range of approaches organisational, policy, practice
- range of projects
- people
- SIF2 projects

THE EFFECTS OF A INNOVATIVE PEER LEARNING PROGRAMME ON UNDERGRADUATE SCIENCE STUDENTS

Jennifer Johnston and George McClelland, University of Limerick

Undergraduate Science Students were supported through an innovative Peer Learning programme utilising undergraduate Peer Leaders in a Science Support Centre at the University of Limerick. This paper aims to investigate the effects the Peer Learning programme had on the science students' attitude, confidence and understanding of Physics. Research supports the concept of involvement in college, the greater the student's involvement, the greater the amount of student learning and personal development [Astin, Bloom and Whiteman]. There is strong evidence from research carried out world wide that Peer Learning when implemented effectively is sustainable. In this study Peer Learning represents a two-way, reciprocal learning experience. It provides students especially the Peer Leaders with the opportunity to take responsibility for their own learning. This study evolved from a recent PhD study on Peer Learning utilising undergraduate science teachers carried out in the Physics Dept at the University of Limerick. The Peer Learning model involved the students working in cooperative groups with a Peer Leader as a facilitator of their learning. Weekly science support tutorials were delivered through Peer Learning during the autumn and spring semesters 2009/2010 in first year undergraduate science modules. A questionnaire was administered to the entire group of undergraduate taking first year physics. This paper presents findings from the science students' attitude, experience, understanding and confidence in Physics. For example, qualitative data reports that those students who attended the Peer Learning support tutorials had a positive experience and they felt they had benefited from the programme.

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CONFERENCE DAY 1 PARALLEL PAPERS

Wednesday 11h 30 - O'Flanagan Theatre

THE MERITS OF BLOGGING; ITS USEFULNESS AS A PEDAGOGICAL TOOL

Siobhán O'Sullivan and Hugh McGlynn, Cork Institute of Technology

Advances in technology present opportunities to change the way we teach. Blogs have become an increasingly popular tool to communicate with others on the internet. Social constructivism provides a pedagogical paradigm that supports the use of blogs in educational settings. In teaching and learning arenas, blogging is viewed as a novel tool with potential for student learning; students can discuss with each other activities/materials covered in class thus extending the learning experience beyond the classroom. Blogs offer online locations where students can express how they feel about what they learn, they can express difficulties they are having on a daily basis, reread previous posts and reflect.

We showcase the use of blogs in the teaching of 1st and 2nd year undergraduate Biomedical Science students as part of an assessment in two separate modules. Students used the blog to reflect on their day to day activities. Many discussed their misconceptions, their difficulties with certain lectures and course materials. Many discussed difficulties they were experiencing around group work assignments. Many shared concerns around certain course work; they shared insecurities around starting college and adjusting to college life. As a course coordinator, the blog gave great insight into the difficulties and struggles many students had with the course. These difficulties were addressed and students felt their voice was heard.

Second year students also prepared blogs which were used to discuss the courses they were taking. These blogs give insight to first year students as to the challenges in the year ahead. Communications between both groups have occurred through micro blogging (using Twitter). Class relations have been built up and from it has emerged a mentoring program between both groups. We showcase the usefulness of blogs in enhancing and directing teaching, building class relations and morale and possibly improving retention amongst first year students.

[Link to Video of Presentation](#)

Wednesday 11h 50 - O'Flanagan Theatre

FLEXIBLE LEARNING OR: HOW I LEARNED TO STOP WORRYING AND LOVE TECHNOLOGY

Laura Widger, Waterford Institute of Technology

A comprehensive technical infrastructure and the ability of staff and students to effectively integrate technology into teaching, learning and assessment activities are essential elements to enable an educational organization to deliver flexible learning to its students.

This relationship between these elements could be considered symbiotic in that both will have close and often long-term interactions with each other. These close interactions will be necessary for the survival and growth of each element and for an educational organization to deliver flexible learning.

One of the pillars of the technical infrastructure for the delivery of flexible learning in educational organizations is the Virtual Learning Environment (VLE). While there is strong debate around the operational status of the VLE (be it “alive” or “dead”), it is still a functioning system being utilized by a significant proportion of staff and students in the third level educational sector.

This presentation reflects on the experiences of building the foundations of a technical infrastructure to enable the delivery of flexible learning. Within 2 years, Waterford Institute of Technology has successfully:

- evaluated & piloted alternative VLEs
- obtained commitment from senior management and migrated users and data to a new VLE
- gained “buy in” from users through staff consultation and information seminars
- outsourced hosting of VLE servers from internal computer services to HEANet (all VLE development and integration work still done internally in WIT)
- tightly integrated VLE with internal systems to reduce administrative work (Internal student registration system for generation of student user accounts and course areas in VLE, internal servers for authentication & login)
- enabled WIT, through customized development of stand alone instances, to increase flexibility in content delivery, innovative course development, provision of “living prospectus” for programme advertisement and marketing
- developed and delivered VLE training
- incorporated open source solutions to build a support framework to track and manage project team activities, and manage user support queries.

[Link to Video of Presentation](#)

Wednesday 12h 10 - O'Flanagan Theatre

THE ESTABLISHMENT AND EVALUATION OF A NATIONAL ONLINE CLINICAL TESTING REPOSITORY FOR SURGICAL TRAINEES AND STUDENTS

Seamus McHugh, Mark Corrigan, Athar Sheikh and Arnold Hill, Royal College of Surgeons in Ireland, Elaine Lehane, University College Cork, Conor Shields, Mater University Hospital, and Paul Redmond, Cork University Hospital, and Michael Kerin, Galway University Hospital

We aimed to develop a new teaching strategy for medical students while creating a national online repository system (Surgent University). We then evaluated the potential of this e-learning modality to facilitate clinical surgical teaching.

An online repository and internet-based interface was designed and hosted on the medical education website www.surgent.ie. Participation was by medical students across three Irish universities. Participating medical students on surgical rotations were asked to upload facts attained through clinical teaching at the end of every day. They then peer-reviewed facts uploaded by other students, with reference to published literature. Student usage of the repository was quantitatively assessed over an eight week period. They were then invited to complete an anonymous survey assessing effectiveness of the online repository. Statistical analysis was performed using SPSS v15 with $p < 0.05$ considered significant.

Over the study period the online repository received 6,105 uploaded facts by 182 final year medical students from the three different universities. The repository web pages were accessed 54,061 times with 4,609 individual searches of the repository. Of the 60 participating students invited to provide survey-based feedback there were 40 respondents, giving a 67% response rate. Of those surveyed, 70% (n=28) rated the online repository as highly beneficial and 75% (n=30) as highly relevant. Overall 87.5% (n=35) felt that it should be continued, and 70% (n=28) felt that it should be expanded beyond surgery to include other hospital specialities. Those who found the programme interface user-friendly were more likely to find it beneficial ($p=0.031$) and relevant to their ongoing medical education ($p=0.002$).

A user-friendly interface allows for high levels of usage while a 'student-centred' structure ensures that the facts uploaded are beneficial and relevant to medical students' education.

[Link to Video of Presentation](#)

Wednesday 12h 30 - O'Flanagan Theatre

OPERATIONS MANAGEMENT ONLINE AT DUNDALK INSTITUTE OF TECHNOLOGY

Angela Short, Dundalk Institute of Technology

This case study documents the development in Moodle of an online Operations Management module in the School of Business and Humanities at Dundalk Institute of Technology. The module is delivered over one semester to students on Level 7 and Level 8 programmes and also offered as a single module through the Lifelong Learning department.

Prior to adopting online teaching and assessment, students were taught face to face in a large group lecture setting. The module which has been delivered over the past three years was redesigned with the expressed aim of engaging students in ongoing assessment for learning throughout the semester. On completion of the module each year, changes are made in a process of continuous improvement. The module demands that students study the course content independently and take several assessments on each of eight topics, all of which account total for 50% of the students' final mark. The learning and assessments whilst asynchronous, is time dependent with each of eight topics opening and closing in sequence at fortnightly intervals. Students who miss a topic forego the marks, a feature that encourages time management. Critical to the module's success has been the use of the essential textbook which every student purchases. The textbook comes with a wealth of resources and has a dedicated website where students can engage in formative assessment by attempting practice tests and problems. The assessment format varies from multiple choice and true or false type questions, to the more heavily weighted calculation questions and individually assigned problems. The assessments are in the main computer marked but the individually assigned problems are tutor marked with students receiving individualised feedback through Moodle. Students also sit a final exam, the format of which has changed over the three years from a written unseen paper, to a completely online final exam and most recently an open book unseen written paper.

[Link to Video of Presentation](#)

Wednesday 11h 30 - *Tutorial Room 2 & 3*

INTEGRATIVE LEARNING: WHAT IS IT – AND WHY IS IT MORE IMPORTANT THAN EVER?

Bettie Higgs, Shane Kilcommins and Tony Ryan, University College Cork, and Alan Booth and Angela Smallwood, University of Nottingham

The American Association of Colleges and Universities (AAC&U) have recently named Integrative Learning as one of the four main goals of Higher Education in the USA. In the UK, a Centre for Integrative Learning received a £4.5 million grant to promote students' integrative learning. Yet, integrative learning, as a concept, is largely unknown in Ireland.

The presentation asks "is a focus on Integrative Learning necessary in the Irish context?" and concludes that it is needed now more than ever.

The authors have carried out research in Ireland and the UK over the past 5 years, where a growing number of examples of good practice have been documented. A synthesis of seventy recent projects which promote integrative learning has revealed some key characteristics. Undoubtedly integrative learning took place before the term was ever coined, but by defining the term and making the work visible, teachers' assumptions and perceptions about student learning have been tested. From this work the effect on student learning is becoming evident. It is interesting to note that teachers themselves report transformations in their own approach to teaching.

This presentation will give the background to the development of the concept, and give examples of practice under the headings of

- Curriculum design
- Pedagogy
- Assessment
- Staff development

Conclusions drawn from a joint symposium on Integrative Learning, held in the University of Nottingham in March 2010, will be presented.

Wednesday 11h 50 - *Tutorial Room 2 & 3*

THE DEVELOPMENT OF A THEORETICAL MODEL OF INTEGRATIVE LEARNING FOR USE IN PROFESSIONAL PROGRAMMES

Irene Hartigan, Siobhán Murphy and Nuala Walshe, University College Cork, and Terry Barrett, University College Dublin

Recent literature challenges educators to implement student-centered learning approaches such as flexible learning. The Higher Education Authority position paper (2009) provides suggestions for how open and flexible learning can be integrated within higher education in Ireland. It challenges educators to ensure that their teaching and learning approach fits the curriculum framework yet mimics the demands and complexities of practice disciplines as well as educational authorities. Aikenhead (2004) concept of border crossings fits with

practice based disciplines as it allows students to combine the realities of practice in more than one domain thus building the capacity for integrative learning (Higgs, 2008). Initially the concept of flexible learning may seem daunting to educators as it can challenge their personal philosophy of teaching and learning.

Educators adopted an integrative approach to guide the linkage between different flexible learning formats so students could make meaningful connections between theory and practice. A theoretical model incorporating the concepts of border crossings, wormholes, threshold concepts and troublesome knowledge is presented and discussed with the context of an integrative approach. This theoretical model of integrative learning is illustrated using three overlapping circles to achieve curricular learning outcomes. Nurse educators designed the model to stimulate critical thinking, individual creativity and enhance performance of psychomotor skills. Adopting theoretical models allow educators of practice based disciplines to build and enhance their own teaching capacity. Equally, this model has potential to be transferable to other professional programmes.

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[Link to Paper](#) [PEER-REVIEWED]

Wednesday 12h 10 - *Tutorial Room 2 & 3*

TEACHING TEACHERS HOW TO TEACH: IMPLEMENTING RESEARCH IN THE SCIENCE CLASSROOM

Sarah Hayes and Peter E. Childs, University of Limerick

Teachers are the gatekeepers for the future generations of scientists and engineers, two key areas that have been heralded as the loadstone of our economy. (Flynn 2010; Childs 2009) On the basis of this it is hugely important that we equip our teachers with the appropriate tools to keep up to date with recent cutting edge science and to transform research into effective practice.

Chemistry Pedagogics is a module that pre-service science teachers take in their third year of study at the University of Limerick. The objectives of this module are to link the students' subject knowledge with their pedagogical content knowledge. Unlike most traditional third level modules Chemistry Pedagogics does not have a strict curriculum that must be adhered to; rather, it is flexible in order to meet the student teachers' needs and to address areas which they find difficult. There is no terminal exam associated with this module; students are assessed on four assignments that they must complete during the course of the module. These four assignments are specifically chosen to encourage students' scientific literacy, confidence in turning research into effective practice in the classroom and to provide future sharable resources. The assignments allow the student teachers to become involved in an

ongoing community of shared practice and to apply research to their own teaching methodologies.

Science is a subject that is constantly changing and evolving, if educators are unable to appreciate and adapt to this students may be left with an unreal view and understanding of the real value and use of science in our everyday lives. This paper aims to show how a flexible curriculum and assessment technique can be used to connect students' skills and knowledge from many areas, using both past and current research and integrating it into their own teaching and learning.

References

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[Link to Paper](#)

Wednesday 12h 30 - *Tutorial Room 2 & 3*

PROMOTING HEALTHY BEHAVIOUR CHOICES: UNDERSTANDING PATIENT CHALLENGES BY UNDERTAKING A PERSONAL BEHAVIOUR CHANGE TASK

Frank Doyle, Anne Hickey, Karen Morgan, Ian Grey, Eva Doherty, Hannah McGee, Royal College of Surgeons in Ireland

Unhealthy behaviours such as poor diet, smoking and low physical inactivity contribute significantly to chronic disease. Our first year medical school project aims to increase student awareness of: the importance of these behaviours and their systematic measurement; recommended behaviour targets in health professional guidelines; challenges to achieving patient behaviour change; and psychological theories which aid behaviour change.

Students are provided with evidence-based health behaviour guidelines for prevention of heart disease. Students select whichever behaviour they would personally like to achieve improvement in, systematically record behaviour for one week (baseline), and then try to implement (healthy) behaviour change for the next two weeks, using psychological theory as an aide. Students report their results and discuss outcomes reflecting on explanations for the success or otherwise of their behaviour attempts. A virtual learning environment (Moodle) ensures project engagement and completion during the relevant timeframes.

This assignment has been successfully completed by students over previous academic years. The use of deadlines for uploading sections of coursework to Moodle (e.g. baseline data) has increased the quality and completeness of the projects. Students learn to use standard instruments such as the Fagerstrom Test for Nicotine Dependence and also learn recommended professional guidelines on diet and physical activity at an early point in a medical training. Also, self-reported health behaviours improved over the course of the assignment.

This project allows students to test the difficulty of adhering to professional advice they themselves will give to future patients. The assignment combines knowledge (e.g. education on chronic conditions, on the role of behaviour change and on professional guidelines), skills (e.g. documenting behaviours, planning and implementing change) and attitudes (e.g. on understanding the difficulties encountered by individuals when making and sustaining recommended behaviour change). The novel use of a virtual learning environment ensures high participation.

[Link to Paper](#)

Wednesday 11h 30 - *Houston Theatre*

INTEGRATION OF TECHNOLOGY IN MATHEMATICS AND SCIENCE TEACHING AND LEARNING

Teresa Bradley, Leah Wallace and Liam Boyle, Limerick Institute of Technology

The literature abounds with research on the difficulties students experience in learning mathematics and science and on the challenges that this poses for instructors. The situation is particularly acute for students who take ordinary level Leaving Certificate in these subjects and who then pursue courses in science and engineering in third level. Much research has been carried out on students' state of preparedness, confidence, motivation and learning styles. An initial response was the establishment of learning support centres in third level institutions. However, further pedagogic research is necessary to identify long term solutions. In 2009 a national centre for excellence in mathematics and science teaching and learning (NCE-MSTL) was established in the UL with a distributed Centre of Expertise established in LIT.

This paper discusses the operation of the LIT Centre of Expertise in Mathematics and Science Teaching and Learning. The aims of the Centre are:

- Use technologies to cater for different learning styles, to enhance understanding and improve retention.
- Increase student participation in mathematics and science lectures by actively engaging them in the lectures.
- Develop the students' skills in problem solving and critical thinking using mathematical tutorial software and physics multimedia.
- Develop a suite of online applications based on mathematical methods, physics methods and techniques covered in lectures.

The Centre seeks to generate evidence-based research to inform best practice for effective teaching and learning in the Institute of Technology sector. Research is being conducted in the centre into the seamless integration of technologies (use of VLE, multimedia in presentations and classroom response systems) into good teaching for first year students in engineering mathematics and physics.

The Centre also acts as a 'drop-in' facility for lecturing staff who wish to explore new pedagogical techniques and technologies. Lecturers have access to real-world data and to techniques designed specifically to best suit the LIT student profile.

[Link to Paper](#) [PEER-REVIEWED]

Wednesday 11h 50 - *Houston Theatre*

LEARNING FROM ENGAGEMENT OF CROSS-DISCIPLINARY LESSON

Dolores Corcoran, Sinéad Breen, Maurice O'Reilly and Thérèse Dooley, St Patrick's College, Drumcondra

This presentation reports preliminary findings arising from a NAIRTL funded research project, which embodied cross-disciplinary collaboration and the use of technology at two levels in the pursuit of research into teaching and learning. The project involved the use of a form of Japanese lesson by colleagues from the Education Department and the Mathematics Department of a college of education. Five colleagues worked together to explore the goals of teaching a research lesson as part of a third level module in the history of mathematics. A research lesson on the contribution of Leibniz to the invention of the calculus using GeoGebra as a resource was prepared by the group and taught by the course lecturer delivering the module. Following ethical clearance, the research lesson was videotaped using a static camcorder focused on the teacher and a roving camera to record student participants' work stations. The research lesson was also observed 'live' by the remaining participants of the lesson study group. Students recorded their impressions of the research lesson in their learning journals. The video recording was subsequently transcribed and analyzed collaboratively in the light of the agreed research lesson goals. Building on the protocols of the first cycle of lesson study a second research lesson in mathematics education for students of primary teaching is in preparation for a different group of students. In this symposium, four participants from the first cycle of lesson study will share their findings on the research lesson. Each will speak from a different perspective addressing the preparation, teaching, observation and review of the research lesson, with particular emphasis on the use of GeoGebra in the teaching of mathematics at third level. The potential for conducting lesson study in a cross-disciplinary fashion will be evaluated as will the contribution of video-stimulated recall to research into the teaching of mathematics.

Wednesday 12h 10 - *Houston Theatre*

USING BLOGS TO FOSTER REFLECTIVE PRACTICE FOR PROFESSIONAL DEVELOPMENT OF TEACHING STAFF IN HIGHER EDUCATION

Martina Crehan and Muireann O'Keeffe, Dublin Institute of Technology

Recent studies suggest that blogs may promote reflective practice among educational users (e.g. West, Wright, & Graham, 2005). This paper examines the adoption and implementation of the use of reflective blogs to support reflective professional development for participants in a Postgraduate Diploma in Third Level Learning & Teaching.

The objectives of the part time Post Graduate Diploma in Third Level Learning & Teaching are to deepen teachers' knowledge, develop individual practice, improve learning and teaching, encourage debate and build towards a culture of inquiry. The learning begins with the real experience of the lecturers in their role as teachers and facilitators of learning, and requires an integrative consideration of practice, theory and self as learner.

An evolving critical reflection on this process, whilst engaged in critical debate with peers, offers a strong platform for the development of considered and innovative philosophies of learning and teaching. Participants often struggle to integrate their learning in a way which moves past the generic depiction of evidence to a more discipline specific account. The introduction of the blog as a reflective device aimed to strengthen the traditional, paper based teaching portfolio as a developmental, practitioner based mechanism for reflection. It aimed to shift from as Klenowski, Askew & Carnell (2006, p.276) advocate “the collection of evidence to a focus on the analysis and integration of learning”.

Consideration of the efficacy of the reflective blogs will include an examination of blog entries to determine the extent and depth of reflection, and feedback from participants on their personal experiences using blogs.

The implications for the use of blogs as a medium to provide and promote critical reflection for teachers, with a focus on connection to praxis in the classroom, will be discussed.

[Link to Paper](#)

Wednesday 12h 30 - *Houston Theatre*

TOWARDS A STANDARDISED, STUDENT-CENTRED APPROACH TO CONTINUOUS ASSESSMENT: A CASE HISTORY OF GMIT LETTERFRACK

Kate Dunne, Pauline Logue-Collins and Angelika Rauch, Galway-Mayo Institute of Technology

An internal self-reflection process at GMIT Letterfrack regarding the practice of continuous assessment (CA) resulted in the research to be presented in this paper. This campus specific approach is linked to the regular self-evaluation, which is conducted institute wide. It was also informed by current discussion regarding summative and formative assessment at third level (including LIN and NAIRTL conferences 2008-2010).

Based on the results of a case study of current CA practice at GMIT Letterfrack, a standardised, student-centred approach to continuous assessment was developed. The methodology employed involved both primary and secondary research. Primary research included an action-research approach centred upon a comparative analysis of the practice of continuous assessment over two academic years 2008-2010.

An initial analysis (May 2009) indicated a significant lack of consistency in both the design and delivery of CA briefs. There was also some confusion on the part of the students, which impacted upon their performance. These results were fed back to lecturing staff, in the context of an action research focus group. As a result, a standardised CA template was designed by the research team, with a recommendation for implementation by staff in the following academic year (2009-2010). The follow-up analysis (May 2010) indicated a significant improvement in the quality of CA delivery, with the majority of staff using the recommended approach. Both staff and student focus groups indicated much greater satisfaction with the process.

Certain problems were identified, such as the failure on the part of the minority to implement the standardised template, templates which contained excessive detail, and a failure to adequately match module learning outcomes with the assessment.

The research results indicate that further staff training to address the relationship between learning outcomes and assessment is required. Induction of new staff should include training in CA design and delivery. Finally, a more formative and less marks-oriented approach to CAs needs to be considered.

CONFERENCE DAY 1 WORKSHOPS – ABSTRACTS

Wednesday 11h 30 - O'Flanagan Theatre

VIRTUALLY THERE

Michael Goldrick, National College of Ireland

Exploring how a learning support service can become more flexible and student-centred, this paper introduces an action-research response to academic isolation. Covering the development of the Virtual Learning Support Service in National College of Ireland, the work will describe how a virtual classroom was used to offer online workshops and individual appointments with full-time and off-campus learners.

As an evaluation of the effectiveness of this new service, the paper will examine student feedback and tutor reflections. Supporting these qualitative measures, the paper will also present a quantitative analysis of semester results, comparing the performance of students who used the new service, with those that did not.

Presented as just one approach to increasing student-centeredness, the paper argues that virtual support can be an effective tool for increasing contact with students, facilitating peer learning opportunities and providing re-usable recordings of support workshops.

[Link to Video of Presentation](#)

Wednesday 11h 30 - National Gallery of Ireland, Merrion Sq. West (meet at concourse, RCSI)

ART WORKS!

Marian McCarthy, University College Cork

The arts provide powerful and flexible ways of making meaning and connect with major theories of teaching and learning (Veenema, Hetland and Chalfen, 1998). Participants will be introduced to the Project Muse and the Entry Points QUEST models of appreciating art, as defined in the work of the Project Zero Classroom (Simon, 1998) at the Harvard Graduate School of Education.

Participants will firstly explore The Generic Game, a learning tool designed to encourage deeper understanding of works of art. Through scaffolded, open-ended questions, viewers of art can ask themselves questions and open new perspectives in the consideration of any work of art. Participants will then be introduced to the Entry Points QUEST, an application of Howard Gardner's (1999a, b) Multiple Intelligences theory.

Participants will work in small groups to explore a series of art works using the above models. We will then discuss the experience and its implications for teaching, for flexible learning and for integrative learning.

This workshop will provide a hands-on, alternative approach to thinking about teaching and learning in a third-level context. It is an approach used in the Accredited Programmes in Teaching and Learning in Higher Education at UCC as a way of introducing academic staff to

flexible, innovative ways of teaching and learning. It promises an interactive, flexible way of engaging with learners and of redefining classroom space as a creative learning environment.

[Link to Paper](#)

Wednesday 11h 30 - Tutorial Room 2 & 3

MOVING LABORATORY WORK INTO THE COGNITIVE DOMAIN

Maeve Scott, Institute of Technology, Tallaght

Third level science students are normally provided with laboratory manuals which include test procedures and criteria to support the practical element of the modules. The student then performs the laboratory work and compiles a report which is submitted and assessed. This conventional approach to teaching and assessment of practical work is focussed on lower level thinking skills.

The level 8 B.Sc. in Pharmaceutical Science in the Institute of Technology, Tallaght is designed to meet the specific needs of the pharmaceutical industry. Industry requires science graduates who can interpret, apply and evaluate scientific and regulatory resources. Systems Validation is a module taught at year 4 of this course to provide graduates with the skills and knowledge for working in validation and related departments. The teaching and assessment strategy of the practical element of this module was designed to address the needs of industry and maximise learning in the cognitive domain. Interpretation of legal and scientific information and generation of validation protocols are important learning outcomes for science graduates. Over the semester, the student is given three systems to validate, is directed to research test methods and criteria from resources commonly used in the pharmaceutical industry. The student must then apply this information to the specific topics and generate validation protocols. The student performs the testing, records and compares results to criteria which would be applied if the testing was performed in a GMP regulated facility. The lecturer meets the student and provides guidance in the class room, library and laboratory.

This workshop summarises the teaching and assessment approach for the systems validation practical module, the findings and conclusions.

Wednesday 11h 30 - 12h 15 - Houston Theatre

LEARNING ENHANCEMENT THROUGH PEER TO PEER SUPPORT

Carina Ginty, Galway-Mayo Institute of Technology, and Nuala Harding, Athlone Institute of Technology

This paper describes a collaborative research study in which peer assisted learning has been deployed simultaneously in two institutes of technology in Ireland, across a range of disciplines using an action research cyclical approach. The study is being funded by the Strategic Innovation Fund II, from the Higher Education Authority in Ireland.

The aim of the research is to determine if peer assisted learning will enhance the learning experience of the first year participants and the employability skills of the peer leaders. This study conducted using participative action research incorporates three phases, with the first

phase evaluated and reviewed in May 2009 using a variety of methods including focus groups, surveys, observations and structured interviews. Conclusions drawn informed the second iteration, which commenced in September 2009. The second phase was reviewed in April 2010 and conclusions drawn will inform the third phase, which commences in September 2010. The third phase will also incorporate the rollout and evaluation of a new PAL Leadership Module (an elective - 5 ECTS - European Credit and Accumulation Transfer System) in both institutes.

To date the findings indicate: the challenges associated with growing and embedding the PAL scheme long term; how this flexible approach enhances the first year experience; how PAL Leaders have benefited from the role; staff perceptions of the scheme; timetabled sessions from week one is essential but problematic; support of staff involved on the programmes is imperative; and ongoing promotion and training workshops for staff and students is a key requirement.

This study has the potential to inform the development of a model for adapting peer to peer support which is embedded within the policies and learning and teaching strategies of institutes of higher education in Ireland.

Wednesday 12h 15 - 13h 00 - Houston Theatre

DESIGNING RESEARCH POSTERS: A WORKSHOP

Imogen Bertin, Centre for Adult Continuing Education, UCC

Could thinking about poster publications at the beginning, rather than the end, of a piece of research change thought processes and even the research question?

Research posters are an accepted form of publication across many disciplines, but the format has become stilted, particularly in the “hard” sciences, typified by over-use of text in a standard three-column “newsletter” style design, often mandated by departments or institutions. The publication process is generally retrospective rather than prospective.

Communication in the era of flexible learning needs to be adapted to provide for conversational opportunities and feedback, as well as for delivery online. Poster competitions need to be incentivised to create opportunities for developing research ideas through peer feedback.

Designing a good poster is not a trivial task even for an experienced graphic designer. The result must attract attention across a crowded room, be read at speed by someone with a coffee balanced in one hand, and yet may be reproduced in an academic publication, or re-used as a teaching material.

Instead of adding complexity and anxiety to poster publication, learning about basic design and information navigation concepts can be a creative experience for researchers. By focusing on graphical communication, and being forced to drastically summarise a research question, introspective light may show the basic problem in a different relief.

Teaching through a “reduce, re-use and recycle” metaphor, with the focus on the graphical shape of the research idea, and using examples of posters by both designers and non-designers, helps learners to examine their own reactions to what makes a “successful” poster,

and to see posters as part of a cycle of communication of an idea, rather than a one-off attempt to squash a PhD into an A1 piece of paper.

Wednesday 16h 00 - O'Flanagan Theatre

FLEXIBLE LEARNING AND ON-LINE LANGUAGE PORTFOLIOS

Houssaine Afoullouss, St Patrick's College, Drumcondra

This paper seeks to explore the role of on-line language portfolios in curriculum development and in the enhancement of learner autonomy in the Digital Era.

Through its aims of achieving coherence, cohesion and transparency in language learning, the eELP (electronic European Language Portfolio) offers the potential to address one persistent difficulty faced by language teachers at third level: dealing with the individual capabilities of students in a heterogeneous group, as a result of different approaches taken to language teaching at second level.

The challenge faced by language teachers at university level is to take stock of what their students know and devise a flexible curriculum that responds both to their students' needs and to the requirements of their language department. It is in this context that eELP, which embodies the principles of the CEFR (Common European Framework of Reference for Languages), has a major role to play. As this paper will demonstrate, on-line portfolios epitomise flexible learning: in terms of time and space, they can be used anywhere and anytime as long as access to Internet is available.

In terms of content, the CEFR "can-do" statements – which cover the five language skills and the six proficiency levels – can be used to generate a plethora of tasks and activities. Some of these tasks can be used autonomously to plug gaps in students' language learning/competencies. Other tasks can be used in a formal setting as part of the language department's requirements. At the end of their primary degree and having been exposed to the basic principles of flexible learning, students will have covered a comprehensive and cohesive programme with the added bonus of having become autonomous, and hence life-long, learners.

[Link to Video of Presentation](#)

Wednesday 16h 20 - O'Flanagan Theatre

BLENDED NOT SCRAMBLED: PEDAGOGIC DESIGN FOR THE 21ST CENTURY COLLEGE STUDENT

Leo Casey, National College of Ireland

Blended learning offers both challenge and opportunity for higher education. There is a general sense that the integration of new technology into teaching and learning is good. However, there are few frameworks to support pedagogic design and little by way of guidance on the optimum balance in and between different instructional settings to facilitate effective student learning. Insight is also needed on the changing role of faculty; expert, teacher, designer, facilitator or coach all are possible roles but what is the optimum in the blend?

Based on insights and experiences from the redesign for blended learning of NCI's Certificate in First Line Management, the author presents a new, student-centred, instructional framework. The framework describes three instructional settings: class, on-line class and

flexible learning activities. Each setting has characteristic constraints and affordances in terms of learning. Viewed from the perspective of student experience, blended learning design involves understanding and harnessing the affordances and recognising and dealing with the constraints associated with each setting. In this way students remain engaged – they are active across all three settings and a full spectrum of instruction, including integrated feedback and assessment, is available.

The changing role of the teacher in blended learning formats is also discussed. Blended learning can lead to a revitalization of in-class instruction. Freed from the traditional role of ‘covering content’, college teachers in blended learning courses are better placed to facilitate student discussion, engagement and participation in class.

This interplay of instructional setting, technology and instruction supports a model of learning based more on student inquiry rather than expert teaching. Thus pedagogic design for the 21st Century learner is an expansive process embracing student perspectives, teaching strategies, instruction and assessment design, and the identification of flexible resources for students.

[Link to Video of Presentation](#)

Wednesday 16h 40 - O’Flanagan Theatre

THE ROLE OF THE WEBINAR IN FLEXIBLE CONTINUOUS PROFESSIONAL DEVELOPMENT

Brian Mulligan, Institute of Technology, Sligo

Live online interactive training and marketing events, often known as webinars, are becoming increasingly commonplace. If executed well, such events can be very useful learning opportunities for professionals. Perhaps more importantly they can be extremely cost-effective, allowing the organisers to source speakers from anywhere in the world at a lower cost and decreasing unit costs by widening the audience geographically and through access to recordings. In the Spring of 2010, Institute of Technology, Sligo, ran a webinar series in Teaching and Learning (1), which proved to be very popular. From that experience and from wider research, a set of guidelines was produced for the organisation of such series. This presentation will argue that the webinar will play an important role in continuing professional development in the future and outline best practice in organising and delivering webinars. It will also suggest how these events and recordings may be used as learning resources and opportunities for interaction within communities of practice.

[Link to Video of Presentation](#)

Wednesday 16h 00 - Tutorial Room 2 & 3

STUDENT OWNERSHIP OF ASSESSMENT AS INTEGRATIVE LEARNING

Kevin Howard, Dundalk Institute of Technology

Drawing on the recent work of Boud and Falchikov (2007, 2009), this paper presents the author’s account of his attempts to develop integrative assessment for learning. Students reading for a degree in Applied Social Studies in Social Care are required to submit a Learning Journal as the summative assessment task for the module ‘Gender Studies’. Everyone is gendered. Moreover, women are heavily overrepresented in the numbers of students who

choose to study Social Care. Therefore, these students have a rich source of experiences that have helped shaped their identities as learners, as people and as social care practitioners. The aim of the Learning Journal is to have students integrate these experiences with formal academic literature, each others' narratives and media constructions of gender to produce documents for assessment. In addition, the criteria used to assess these journals are developed by the students themselves, an example of pedagogical flexibility aimed at developing a student-centred approach to assessment for learning. Assessment is an exercise in power which is necessarily asymmetrical. Nevertheless, this power imbalance can and should be lessened, both for moral and pedagogical reasons. Involving students in devising the criteria to assess how effectively they've integrated their experiences with other forms of data democratises, to some extent, the assessment process. In addition, the assessment exercise encourages students to make judgements about what counts as evidence of learning. What the paper shows is the transformative impact this form of integrative learning can have when students are shown how, encouraged and allowed to take ownership of their assessment. Students can and will act as self-directed learners when what is learnt is made relevant and when they have the power to input into their assessment.

Wednesday 16h 20 - Tutorial Room 2 & 3

APPROACHES TO LEARNING OF POSTGRADUATE HEALTHCARE PROFESSIONALS IN AN OUTCOMES-BASED CURRICULUM

Pauline Joyce, Royal College of Surgeons in Ireland

This presentation focuses on a study which explored the approaches to learning of postgraduate students from the healthcare profession. Their experiences are placed within the perspectives of their lecturers and external examiner for the programme. I employed a phenomenological approach, through the lens of fourth generation evaluation, to gather student' experiences as insider stakeholders. Previous research relevant to this topic has tended to focus on exploring deep and surface approaches to learning using phenomenography or psychometric inventories, from the students' perspectives. Research on conceptions of teaching has been carried out separately. It is not clear from the studies reviewed what type of curriculum was in use. Moreover, despite evidence suggesting that learning approaches are complex and vary across disciplines and cultures, this line of research has tended to portray learning as a single phenomenon which can be understood in isolation from the contextual influences of the teachers and the curriculum itself.

Prior to in-depth interviews with students I analyse the curriculum as documentary evidence and interview lecturers and the external examiner to contextualise the student experiences. This pluralistic evaluation allows the relationship of experiences to be understood in the context of external influences. I draw on Barnett and Coate's domains - knowing (learning as knowledge), acting (learning as doing) and self (learning as personal and professional development), as the conceptual framework, to understand and communicate findings from all stakeholders. The main engagement of students in learning is in the domain of acting, with a focus on application to practice and alignment of the learning outcomes. However, there are variances in emphasis within all domains from the stakeholders. The findings suggest a need to restructure the curriculum model of the programme to better represent the

dynamic nature of an engaged and living curriculum for postgraduate students with different learning agendas.

[Link to Paper](#)

Wednesday 16h 40 - Tutorial Room 2 & 3

THE USE OF LEARNING JOURNALS IN LEGAL EDUCATION AS A MEANS OF FOSTERING INTEGRATIVE LEARNING THROUGH PEDAGOGY AND ASSESSMENT

Shane Kilcommins, University College Cork

In the late nineteenth century, Christopher Columbus Langdell, Dean of Harvard Law School, introduced a new pedagogy in law that was designed around Socratic teaching. It involved a case-dialogue method, where students are called upon to recount facts, argue legal principles and explain their reasoning in the lecture hall before an authoritarian lecturer. Rigorous logical reasoning was honed at the expense of other legal skills. The library rather than the courtroom was the appropriate workshop. Social, cultural, moral or political considerations were abandoned in pursuing legal principles. The case method became the 'signature pedagogy' of legal education, and is still viewed as important in training students in the basic skills of law.

There are however weaknesses in the approach which undermine its epistemological and pedagogical contribution. It cannot account for the interpretive leeways of language, or that facts are elusive and will need to be constructed, or that judges are not asocial or apolitical operators, or that law employs principles and standards that are malleable, and that ruptures in social, economic or cultural conditions require ways of legal thinking which will not be found in previous judicial decisions. Langdellianism does not address such complex, interdisciplinary issues, and consequently students do not have to contend with them.

The current research shows how learning journals on an LLM programme in Criminal Justice in the Law Department in UCC facilitated integrative learning in legal education, making it more inclusionary, with greater interdisciplinarity. The course offers students the opportunity to pursue a theoretical inquiry while experiencing the reality of the criminal justice system in practice. Results show that students are stepping beyond the boundaries of doctrinal legal rationality, and insights gained show the use of learning journals must be managed by the entire teaching community on the programme to optimise pedagogical and assessment outcomes.

Wednesday 16h 00 - Houston Theatre

INNOVATIVE TEACHING THROUGH VIDEO GAMES: LITERATURE REVIEW AND BEST PRACTICES

Patrick Felicia, Waterford Institute of Technology

Game-Based Learning (GBL) is an increasingly popular medium across Europe and the United States of America, as it promotes students' motivation and provides them with a constructive and collaborative approach to learning. Video games match the needs and aspirations of our new generation of students, often called digital natives, and are usually based on implicit

instructional design concepts. However, despite the phenomenal educational and motivational potential of video games, few Irish Universities and Institutes of Technology are currently using GBL, whereby digital games can be employed to illustrate concepts interactively and on a wide range of devices (e.g., desktop computers or smart phones). It is believed that this lack of interest is perhaps due to a lack of universal guidelines for the use and deployment of educational video games, and also because of a perceived requirement to be an avid gamer in order to be able to teach effectively with video games. In this paper, the author aims to provide a comprehensive introduction to GBL, and to review best practices for the design and deployment of GBL systems. Theoretical foundations supporting the design of educational video games will be explained, based on instructional design, game design and motivational factors. Common issues faced by instructors will be analysed. Case studies on the use of video games for teaching will be presented, highlighting and explaining best practices. This paper should be of particular interest to instructors who are willing to use educational video games as a learning resource, but with no or little previous experience of video games. It should provide both theoretical and practical information that practitioners can employ as part of their innovative teaching strategies.

Wednesday 16h 20 - Houston Theatre

UNIVERSAL DESIGN FOR LEARNING – THE BENEFITS OF TECHNOLOGY ENHANCED LEARNING FOR STUDENTS WITH DISABILITIES

Patricia Kearney and Elaine O’Leary, Athlone Institute of Technology

The Regional Assessment & Resource Centre was established in early 2007 to increase the participation of students with Specific Learning Difficulties at third level through the provision of assessment services and research outputs to inform and support the use of interventions for students. The initiative involved the five colleges in the BMW region- AIT, GMIT, NUIG, LYIT and IT Sligo. Part of the work of the initiative included a survey of students with Specific Learning Difficulties to learn more about their experience of learning at third level and the success or failure of learning interventions focusing on assistive technology and learning support. 97% of students reported that technology increased their functional independence and all users of literacy support software reported that it improved their performance. Students stated that they benefitted not just from specialized technology but also from mainstream technology and benefits gained were on a par with some of the specialized technology. The positive impact of technology enhanced learning became more evident when exploring the area of assistive technology abandonment which in most cases results in negative outcomes for students as they are not receiving the performance and functional independence benefits which it could potentially provide. Usually the reasons for abandonment are technological dysfunction, discomfort and self-consciousness in using a device which identifies them as having a disability however the primary reason students gave for abandonment of assistive technology was that they simply no longer needed it. They no longer needed it because of changes in teaching and learning, principally the increased use of electronic documents and online learning tools such as Moodle and Blackboard. These findings endorse the training of mainstream teaching staff in accessible technology enhanced learning which has the added benefit of supporting the learning and personal development outcomes of students with disabilities.

PROMOTING FLEXIBLE LEARNING THROUGH NEGOTIATION

Lorraine McGinty, University College Dublin

In 2009 UCD launched Ireland's first taught postgraduate programme operating according to a negotiated learning (NL) model. While some Universities have demonstrated the effectiveness of the NL model, no European University offers a negotiated programme of learning with anything near to the breadth of flexibility covered by the taught MSc in Computer Science by Negotiated Learning.

The NL programme is aimed primarily at: (1) individual students with specific workplace & continuing professional development needs, and/or (2) cohorts of students who wish to specialise in a specific area of computer science (i.e. the programme may be negotiated with a specific industry sector or on behalf of a specific group of students).

Importantly, the programme is very different from the traditional "structured" postgraduate programme where students tend to have very restricted choice (if any) and are often required to take some modules that have no relevance to critical areas where they have specific learning requirements. In contrast, NL students undergo a very detailed assessment of their training-needs and individual student negotiated learning contracts are carefully customised with each student across >80 module offerings. Module offerings range from programming Java/C/C++/Ruby/Python to Data Mining, Bioinformatics and complementary modules in related disciplines (e.g. Entrepreneurship, Mathematics, Engineering, etc.). This paper describes how a programme of learning is formulated from the bottom up that carefully maps individual student skill requirements to very specific learning outcomes in view of their thematic specialisation. In addition to taking taught modules each student is required to undertake significant research practicum specific to the focus of their specialisation.

This paper also highlights how the programme provider (i.e. the UCD School of Computer Science & Informatics) is developing the programme further through the establishment of learning-contacts across other Schools, Colleges and Research Centers throughout UCD. In addition, opportunities and limitations related to the cross-institution implementation of this innovative learning model are presented following a pilot study carried out with DCU during the academic year '09/'10.

CONFERENCE DAY 2 PARALLEL PAPERS - ABSTRACTS

Thursday 10h 00 - O'Flanagan Theatre

TECHNOLOGY BASED TEACHING AND LEARNING: E-LAW SUMMER INSTITUTE, UCC

Fidelma White and Louise Crowley, University College Cork

The aim of this presentation is to provide an insight into our experience of developing and delivering a summer programme which relies on innovative, technology-based teaching and learning to explore current issues in eLaw. The eLaw Summer Institute (ELSI), which is currently in its 6th year, is a valuable opportunity for students to acquire expertise in areas such as Electronic Commerce Law, Intellectual Property Law and Cyber Law.

We will demonstrate the effectiveness of the use of technology within the legal curriculum of the Summer Institute, explore the challenges arising, and, the manner in which they have been met.

Given that the subject-matter of ELSI concerns the interface between the legal system and development in information and communications technology, ELSI embraces technology in the delivery of the programme, including the more 'traditional' use of Power Point presentations and Blackboard, and the more innovative methods including the use of CDs to supply reading materials, asynchronous classes recorded on DVD or available via the internet to download, and personal response system to encourage class participation. The use of technology has also spread beyond the Summer Institute into the wider UCC Law Faculty curriculum, in particular at postgraduate levels and in relation to continuing professional development. In this regard, ELSI has operated as an effective launch-pad for innovative forms of teaching and learning.

In delivering the programme, the importance of adopting a reflective approach to the lecturing and learning experience has become increasingly evident as we attempt to improve the course annually. During the currency of the Fifth eLaw Summer Institute (2009), the ELSI directors devised a student questionnaire which sought to elicit views from students on matters concerning the design and delivery of the programme. This 'programme questionnaire' was unlike previous subject-based students questionnaires that had been administered annually enabling to gauge the student experience of technology based delivery.

[Link to Paper](#) [Link to Video of Presentation](#)

Thursday 10h 20 - O'Flanagan Theatre

EVALUATION OF INTERACTIVE VIDEO BASED SCENARIO TO TEACH PROFESSIONALISM TO MEDICAL INTERNS

Bryan Butler and Michelle McEvoy, Royal College of Surgeons in Ireland

Effective teaching of professionalism to students has been an issue for Medical schools.

Although the key concepts of professionalism are well described in the literature, institutions still struggle with how to efficiently demonstrate problems in professionalism. Medical

schools have an obligation to ensure that their educational programmes are designed explicitly to nurture the development of professional values. Although the importance of the informal and hidden curriculum cannot be overlooked, the formal curriculum should not be discounted as an important contributor to professional development. The introduction of role-play and simulated patients is now providing an appropriate environment in which to develop professional skills. Our aim was to evaluate the effectiveness of an online interactive education tool developed to augment the Personal Professional Development Curriculum at RCSI. The education tool comprised of several videos which accumulated to create one video based scenario in which students have to role play and problem solve. There were also several MCQs to test the students knowledge of the subject. Students from Senior Cycle 1 (N=26) were invited to participate in the evaluation of the Virtual Patient in order to explore student's views on the usefulness and acceptability of the VP and give insight into factors that will drive the development and improvement of the VP to enhance the quality of this online education resource and maximize its educational benefits. Virtual Patients can be used to provoke reflection, stimulate discussion, help learners confront their feeling and give students practice in responding to challenges. Overall we found the Virtual Patient to be a useful and engaging learning tool to help students develop professional values.

[Link to Video of Presentation](#)

Thursday 10h 40 - O'Flanagan Theatre

FLEXIBLE LEARNING OPPORTUNITIES FOR TEACHERS IN THE 21ST CENTURY

Michael Hallissey, Hibernia College

In creating a modern teaching profession it is essential that all teachers have opportunities to enrol and participate in post-graduate degrees during their teaching career, irrespective of where they reside. The MATL in Teaching and Learning (MATL) is designed so that teachers, wherever they are located, can obtain a Master's degree that focuses on the issues they encounter on a daily basis in their classrooms. The programme provides teachers with a flexible modular route to obtaining their degree and extensive use is made of new technologies to allow learners engage with the programme content and with staff and peers. The course enhances the traditional lecture with the use of Web 2.0 tools such as YouTube videos, podcasts, blogs and Wikis. The college faculty has identified a range of relevant multimedia resources that are used to enhance to the core lesson content. For example the College has also used podcasts to bring the views and insights of international experts into our online classroom.

This paper will showcase how the college uses technology to enhance our students' learning experiences through the publication of engaging content and by supporting student inquiry through the use of fora and online tutorials. This presentation will unpack the learner's experience of participating in an online post-graduate programme. We will share the learners' insights on participating in such an online programme, both the positive and negative elements of such an experience. We will compare and contrast our research findings with the established research findings in the area of online learning. We will outline the skill-set our learners believe is necessary to possess in order to participate meaningfully online. Learning online is different from learning in a face-to-face setting and this presentation will share the experiences of one cohort of 31 adult learners, all teachers, who are enrolled in a new MATL programme.

Thursday 10h 00 - Tutorial Room 2 & 3

GROUP PROJECTS IN THE INFORMATION TECHNOLOGY CURRICULUM: TOWARDS BEST PRACTICE

Brendan Lyng and Catherine Lowry O'Neill, Waterford Institute of Technology

Employers in the computing industry increasingly seek graduates who possess good team-working skills. Various HETAC and WIT strategy and policy documents declare that students should emerge from their third level studies possessing the ability to work in teams. This paper presents the findings of a mixed method study consisting of questionnaires and interviews of WIT undergraduate computing students.

The research found that:

1. Student teams are barely cohesive (based upon quantitative measures of cohesion);
2. Computing students are unfamiliar with document sharing and project collaboration technologies such as Google Apps/Google Docs, Mendeley or Dropbox;
3. No formal scheduling of group projects can lead to a massive imbalance of in the frequency and number of group projects across the four years of a computing degree;
4. The grading of group projects was perceived by students to be unfair and inaccurate, particularly when average group marks were allocated to all group members by lecturers.
5. Presenting a project that is easily divided into non-interdependent sub-tasks leads to students working alone and not developing their team-working skills. High levels of sub-task divisibility may also lead to loafing going unchecked until late into the project cycle.

The research findings have implications for lecturing staff, administration staff and students of group projects. They have relevance to integrative learning as they combine knowledge from multiple sources (pedagogy, assessment and evaluation, curriculum design, psychology and project management), as well as to technology enhanced learning (student under-utilisation of document sharing and collaboration technologies).

Thursday 10h 20 - Tutorial Room 2 & 3

A MULTIDISCIPLINARY APPROACH FOR SCIENCE LEARNING

Eilish McLoughlin and Odilla Finlayson, Dublin City University

First year undergraduate science students generally attend lecture and laboratory modules in introductory Chemistry, Physics, Biology and Mathematics, regardless of their ultimate degree programme. Students generally don't see the links between these subject areas and in some cases, even question the relevance and importance of each discipline. In this initiative, students were engaged in connecting skills and knowledge from these disciplines through tackling interesting multidisciplinary and interdisciplinary problems. Students worked in small groups, facilitated by postgraduate tutors, to solve "real-world" problems from topics such as, nuclear energy, brewing, water treatment and environmental issues of oil pollution. As a result of this module, students reinforced their understanding of concepts in physics,

chemistry and biology and gained an appreciation of the relevance of other science disciplines. Students also benefited through the development of skills to work as part of a group to collate, discuss and communicate information. A discussion of the challenges involved in student assessment and in devising suitable problems will be presented in this paper. Evidence obtained from analysis of student feedback, over a four year implementation period with over 600 students, indicates that while many students engage fully with the content, others find the open nature of the problems (e.g. locating information, lack of right answer) less appealing, and these concerns will be addressed.

Thursday 10h 40 - Tutorial Room 2 & 3

INTEGRATIVE LEARNING AND TECHNOCULTURE: WHAT'S AT STAKE?

James Cronin and Daniel Blackshields, University College Cork, and Julianne Nyhan, Universität Trier, Germany

Alvin Toffler (b. 1928), asserts that the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn. Toffler asserts the primacy of flexible learning for this century. Howard Gardner (2010) stressed that the synthesizing mind will be the most important mind for the 21st century. He suggests that we need to re-think the way we think, and by implication how we learn and teach. Interdisciplinary, transliteracy and integrative learning place emphasis on overcoming inhibitions and making connections between disciplines and fields. Integrative learning theory is rooted in many other learning theories, including, constructivism, project-based learning, and multiple intelligences theory. It distills those theories down to the following salient points: acknowledging learning diversity; student-centered and student-driven learning; authentic learning experiences; authentic assessment both to the learner and to the world around them. Advocates of integrative learning aspire to promote attitudes of mind which foster self-authorship and a lifelong engagement with learning. Such attitudes are greatly needed in contemporary technoculture. Facilitators need to remain flexible in order to support the development of this attitude of mind. To date the scholarly literature on integrative learning has largely focused on addressing issues from students' perspectives. By contrast, issues of integrative learning from teachers' perspectives have received sparse attention in the SoTL literature. Yet, the educational psychology literature emphasises the fundamental role of the facilitator in the promotion of deep learning. Emerging issues, discussed in the literature on integrative learning, teaching and collaborative practices, include: institutional support structures; disciplinary language; openness to difference and reassessing disciplinary boundaries. Drawing from collaborative studies on fostering "visible thinking" in Continuing Education, Economics, History of Art in Cork and Digital Humanities in Trier, this paper asks: for facilitators fostering integrative learning what is at stake?

Thursday 10h 00 - Houston Theatre

EXPLORING THE SYNERGY BETWEEN PEDAGOGICAL RESEARCH, TEACHING AND LEARNING IN INTRODUCTORY PHYSICS

Leah Wallace, Limerick Institute of Technology

Synergy, by definition, is the interaction of two or more agents so that their combined effect is greater than the sum of their individual effects. By actively linking the pedagogical research performed through the Limerick Institute of Technology Centre of Expertise in Mathematics and Science Teaching and Learning to the mainstream teaching and learning of undergraduate introductory physics carried out in the LIT Department of Applied Science the benefits to both areas will be manifold.

Research currently being undertaken at the LIT Centre of Expertise is focussed on developing and delivering a set of pedagogical techniques designed specifically to meet the educational needs of our first year Science learners in the Institute of Technology sector. These techniques include several active learning strategies and teaching interventions directed at addressing the deficits in learners' knowledge and understanding. The benefits to learners include developing their metacognitive skills, and increasing their motivation and engagement. Our physics modules have been specifically designed with a strong emphasis on developing a holistic (i.e. qualitative, quantitative and conceptual) understanding of physical principles which are relevant to the instrumentation and analytical techniques employed by biologists, environmental scientists, chemists, forensic scientists and other analytical scientists.

By placing an emphasis on active learning in introductory physics lectures, practicals and tutorials, developing metacognition and using group-work to solve real-world problems an authentic learning experience is facilitated.

This paper discusses the background and presents preliminary results that indicate that a holistic learning strategy and development of metacognition are positively impacting learners' performance in first year introductory physics.

[Link to Paper](#) [PEER-REVIEWED]

Thursday 10h 20 - Houston Theatre

THE IMPACT OF EDUCATION LEVEL AND TYPE ON COGNITIVE ETHICAL DEVELOPMENT

Elaine Doyle and Joanne O'Flaherty, University of Limerick

There is a critical need to address a disregard for ethics in our society, clearly evidenced by the current global economic crisis. The importance of education in developing ethically sensitive individuals who use principled ethical reasoning when facing dilemmas has been widely acknowledged (Pascarella & Terenzini, 1991; Rest et al., 1999). Cognitive psychology posits that before an individual reaches a decision about how to behave ethically in a specific situation, ethical or moral reasoning takes place at a cognitive level. Kohlberg's (1969, 1973) stage sequence theory identifies six stages of ethical reasoning and Rest's Defining Issues Test (1979a, 1986) provides us with a means by which to measure the ethical reasoning ability of individuals using hypothetical ethical dilemmas of a broad social nature.

This paper examines the impact of education level and type on ethical reasoning in an Irish context by analysing the ethical reasoning scores of 351 participants from a wide variety of educational backgrounds. Three distinct participant groups are involved in the study. The first group consists of young student teachers prior to the completion of their teaching degree. The second group are tax professionals, all of whom are professionally trained as well as having relevant undergraduate degrees (usually in law or business) with many also having studied at post graduate level. The third group are members of the public at large and have neither education level, type or profession in common. The administration of the DIT to all three groups of participants facilitates testing whether participants with different levels and type of education differ significantly in their response to ethical dilemmas. An enhanced understanding of the impact of education on ethical development will facilitate the development of educational initiatives aimed at augmenting ethical reasoning in third level students.

Thursday 10h 40 - Houston Theatre

A 'WHOLE DISCIPLINE' APPROACH TO ENHANCING RESEARCH IN THE UNDERGRADUATE GEOGRAPHY CURRICULUM

Niamh Moore-Cherry, University College Dublin, Susan Hegarty and Ruth McManus, St Patrick's College, Drumcondra, and Kay MacKeogh and Shelagh Waddington, National University of Ireland, Maynooth

The benefit of providing all students with research opportunities during their undergraduate studies is widely acknowledged (Healey and Jenkins, 2009; Spronken-Smith and Kingham, 2009). Increasingly individual departments are trying to find ways to meet this challenge in the face of constraints including increasing class size and diminishing resources. In this paper, we adopt a 'whole-discipline' approach to the question of where in the geography curriculum, and in what ways, do undergraduate students get the opportunity to engage in research? Our overall goal is to support the enhancement of the research experience for geography undergraduates in third level institutions in Ireland. Funded by a Special Interest Group award from AISHE, survey data was collected from all higher education geography departments across the island and follow up interviews were undertaken to gain a national perspective on the kinds of research skills and experiences a geography graduate should ideally have. We conclude by suggesting that this kind of cross-institutional approach can promote good practice across the discipline and generate useful resources to support research-based learning.

References

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Thursday 11h 30 - O'Flanagan Theatre

INSTRUCTIONAL VIDEOCASTS: FACILITATING LEARNING IN A MOBILE WORLD

Robert Hickey, Institute of Technology, Blanchardstown

This research paper initially outlines a problem identified by the teacher-researcher with phase six apprentice bricklaying students achieving psychomotor learning outcomes, mainly due to high student numbers and limited available workshop time. A possible solution to this problem is presented through the facilitation of the students in using instructional video demonstrations on mobile phones to optimise the time available on this key component of their apprenticeship study. The research objectives span four key areas for apprentice education in this emerging age of mobile learning: identification of patterns of mobile use, gauging of the appeal of mLearning, ease of usability (which includes technical issues with mLearning) and student's perception of effectiveness of instructional videocasts for learning. Eleven short instructional video demonstrations were created for the study. They were uploaded to the memory cards of the student's mobile phones so they could access them when and where they were required. Laurillard's conversational framework (1993) was used in order to frame the learning scenario for which the videos were used in the practical face-to-face workshop. Within an action research approach, data was collected from sixteen students using a combination of a survey with a range of closed questions, a practical assessment sheet and a follow-up focus group interview. A research diary was also kept throughout the duration of the project. This data was then analysed by following Miles and Huberman's interactive model of data analysis (1994). The study showed that more than 75% of the students used the videos both at home and in the workshop. They all were in favour of using their mobile phones for just-in-time training on this module and more than 90% wanted to utilise this method of learning on their work sites in the future. From the perspective of the instructional videocasts, 95% found the picture quality of the videos good on their standard mobile phones and had experienced limited technical difficulties. Most importantly, the study showed that the use of mLearning was more effective for apprentice student's achieving practical learning outcomes than the previous face-to-face training alone.

[Link to Video of Presentation](#)

Thursday 11h 50 - O'Flanagan Theatre

WHAT DO STUDENTS THINK ABOUT TECHNOLOGY?

Shelagh Waddington, Una Crowley and Conor McCaffery, National University of Ireland, Maynooth

Increasing use is made of technology of various types in an attempt to enhance the student learning experience. One of the drivers of this development would appear to be the increasing size and diversity of the student body. While this use may be desirable and, indeed, inevitable, issues have been identified in relation to attitudes of the student body towards this trend. Indeed, some studies have suggested that 'we may not be at the point of changing the classroom practices of either professors or students, contrary to common assumptions' (Lohnes and Kinzer, 2007) about the 'Net Gen' student body and their interests in technology or their perceptions about its use in education. This paper presents the results

of a study which has explored not only the varied use of such technology, but also the student response to this usage in large classes in the National University of Ireland, Maynooth. Results from this exploration reveal that while students often react very favourably to the technology used as part of their studies, their responses also reveal a number of concerns, some relating to specific issues and others which raise concerns about the students' general understanding of the nature of education. Data for this report were collected as part of a larger project on Large Group Teaching, partly funded by a grant from NAIRTL. The authors wish to express their gratitude for this and for the co-operation of staff and students of NUIM in the work.

Reference

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Thursday 12h 10 - O'Flanagan Theatre

CHANCE FAVOURS THE PREPARED MIND: STRATEGIES TO ENHANCE EDUCATIONAL RESEARCH EXPERIENCES

Etain Kiely, Gail Cummins, Rowan Watson, Margaret Savage and Orla Walsh, Institute of Technology, Sligo

Educational research for many academic staff may be regarded as an additional layer on top of a very intense work schedule. The chances of integrating authentic enquiry into education practice in a collaborative and supportive environment can depend on many variables including time and resources. This case study paper demonstrates how a small group of researchers are maximising emerging technologies to enhance educational research experiences in a flexible yet systematic way.

Experiences are presented through the lens of a supervisor and four research students undertaking level 9 and 10 educational research. The case study explores three key sub themes including collaboration, collecting and analysing data and research management.

A collaborative web-based workspace was established for each of the four research projects using a free cross-platform compatible system called Dropbox. This allows the research teams to share, synchronise, and edit the most up to date version of files. Project proposals, timelines, papers and chapters are stored and shared online using this system. Research meetings have been facilitated online using web conferencing systems. Scribe liven pens are used as a primary tools to collect rich qualitative data for interviews and focus groups. This allows the researchers to simultaneously record audio with handwriting, which can then be uploaded to a computer for analysis and coding. The use of Survey Monkey and interactive clickers has resulted in increased response rate for quantitative studies inside and outside the class environment. Free research management tools such as 2collab and Mendeley are enabling the team to share, bookmark and generate bibliographies that can be exported directly to word.

The experiences of a supervisor and research students in using these innovative tools and strategies is presented within the paper in terms of advantages and pitfalls. The paper

concludes with recommendations for educators on how to integrate educational research into their practice.

[Link to Paper](#) [Link to Video of Presentation](#)

Thursday 12h 30 - O'Flanagan Theatre

ESSENTIAL CONSIDERATIONS IN IMPLEMENTING AN E-LEARNING STRATEGY AT INSTITUTIONAL LEVEL

John Dallat and Brendan Ryder, Dundalk Institute of Technology

Emphasis on the role of flexible learning in extending equality of opportunity to a broader cross-section of society, including mature and access students, individuals who are in full-time employment and, indeed, those who are not, is increasing throughout higher education. The Centre for Excellence in Learning and Teaching in Dundalk IT has taken a 'bottom-up' approach to its flexible/blended learning policy implementation for students and staff. This means building operational capacity with lecturers and students in a realistic, incremental and staged manner in the context of the Institute's strategic objectives. The challenges posed by such an undertaking are enormous, and now all the more so for institutions nationally, in view of the position recently adopted by the HEA (November, 2009), in stating that "flexibility of provision" is a "key indicator of the responsiveness of higher education to Irish society " (p. 2). How are we to define flexible learning? In the paper proposed, it will be shown how flexible learning may be viewed along the following continuum: Level 1 : Web-supported; Level 2: Web dependent; Level 3: Fully online without face-to-face contact. The paper will examine each in detail, highlighting the implications for planning and teaching at departmental and institutional levels. Such analysis will provide conference participants with a framework for the implementation of blended learning, but this alone will be shown in the paper to be an insufficient approach. The authors of the paper will therefore additionally present a 10-Point Implementation Plan which they have designed and been engaged in implementing in their own Institute. For example, they will share the contents of an e-learning policy which they have written for their Institution and key aspects of a continuing professional development policy they are currently implementing. A number of other aspects of the 10-Point Plan will be presented. In view of the pending changes within higher education currently being anticipated, the paper will provide 'food for thought' on planning and teaching strategies that may be, or are likely to be, needed as change occurs. The paper will be a 'blend' of practical and pedagogical, as well as policy-based, considerations. Building on the work of, among others, Cannon and Newble (2000), it will establish the importance of a flexible learning policy which is student-centred.

[Link to Video of Presentation](#)

Thursday 11h 30 - Tutorial Room 2 & 3

THE EXPERIENCES OF ENGINEERING STUDENTS WORKING IN MULTI-DISCIPLINARY PROJECT TEAMS

Sivakumar Ramachandran, Timm Jeschawitz and Denis Cullinane, Dún Laoghaire Institute of Art, Design and Technology

Team based student assignments are welcomed by many students and educators in the broad aims of providing a social element to studies, development of inter-personal skills and co-operative management of time and resources. Once the social and co-operative framework of team-working is established in the cohort of a third level programme, the group is able to further enhance its co-operative skills by working with students from another discipline. This added dimension broadens the expectations and attitudes of each individual cohort, preparing them for 'real-world' interaction involving the development of understanding of each other's perspectives, and negotiation between all those in the multi-disciplinary team. Such skills are invaluable for graduates who are increasingly required to work alongside others with a variety of skills and backgrounds.

For many reasons, the students' experience of working in multi-disciplinary teams can be positive, rewarding and challenging as well as negative, stressful and without any perceived benefit. Whilst the personality of the student plays an important part in this highly subjective process, once the working protocols have been established, students can participate on a more objective basis and together these teams can deliver their work on time to a high level of satisfaction.

This paper draws on three years' experience in the collaboration of third level engineering students in Audio-Visual Media Technology with honours business students in Arts Management at the Institute of Art, Design and Technology in fulfilling the briefs of clients both within the institute and in such arenas as theatres, music groups, art galleries and media enterprises.

Case studies of individual students are analysed, and recourse is made to established educational models and best practice. The paper will identify the generic strategies that students use to manage the uncertainties in working in a multi-disciplinary arena, including the interactions with external clients and facilitators.

Thursday 11h 50 - Tutorial Room 2 & 3

INTEGRATED, INTERPROFESSIONAL EDUCATION FOR FIRST YEAR UNDERGRADUATE MEDICAL, PHYSIOTHERAPY AND PHARMACY STUDENTS

Judith Strawbridge, Celine Marmion and John Kelly, Royal College of Surgeons in Ireland

The World Health Organisation envisaged the introduction of Interprofessional Education (IPE) as a continuum, beginning early in undergraduate programmes. Positive outcomes have been demonstrated at undergraduate level in relation to learning experiences, skill acquisition and changes in attitudes. IPE is used increasingly at early stages with the aims of developing team working skills and dispelling stereotypes.

A formal, compulsory, IPE learning opportunity was introduced for medicine, physiotherapy and pharmacy students. The module (5 ECTS), entitled "Medicines: Concept to Patient", aimed to explore the multi-faceted nature of healthcare from first principles of drug design through to patient care and begin to appreciate the role of the various healthcare professionals. Aspirin was the integrating strand throughout to provide context. Lectures, integrated clinical cases, quizzes and exercises were delivered. A mixed methods study, controlled before and after study and qualitative evaluation, was undertaken. The students were surveyed at the beginning and end of the module. Third year students had not

undertaken IPE and were surveyed to provide the control. The Readiness for Interprofessional Learning Scale (RIPLS) was used to determine if there was evidence of changing attitudes to IPE. The Attitudes of Health Professionals Questionnaire (AHPQ) was used to assess interprofessional attitudes. The study was approved by the Research and Ethics Committee of the Royal College of Surgeons in Ireland.

The intervention did not significantly alter the attitudes of the students to IPE or other healthcare professionals. The study did, however, demonstrate that students had a statistically significant appreciation of their future professional roles. Students were generally positive about learning together, recognising that collaboration would be beneficial to the care of patients.

IPE may have the potential to improve collaboration amongst healthcare professionals, but further research is required to determine how best to design IPE and when best to deliver it.

Thursday 12h 10 - Tutorial Room 2 & 3

PREPARING FOR SUCCESS: A STUDY OF HOW TARGETED SKILLS-BASED WORKSHOPS CAN EFFECTIVELY AID FIRST YEAR STUDENTS TO BRIDGE THE GAP BETWEEN SECOND AND THIRD LEVEL LEARNING

Natasha Underhill, Lyndsey El Amoud and Seamus O'Tuama, University College Cork

On the basis of evidence from the past four years of a discernable drop in the academic performance of first year students, as well as decreasing progression rates, the Preparing for Success project (funded by NAIRTL) aimed to build a bridge between second and third level education by offering a range of targeted skills based workshops to first year BSc Government students in University College Cork on a pilot basis for the 2009/2010 academic year. This paper will examine our experience of directing the Preparing for Success programme during this pilot phase. A detailed overview of the programme will be provided, followed by a comprehensive evaluation - using both empirical and qualitative methods - of the programme's impact on the 2009 BSc Government cohort. Finally, we will offer a general appraisal of the programme and will suggest some possible changes for future implementation.

Thursday 12h 30 - Tutorial Room 2 & 3

USING LEARNING AGREEMENTS TO FACILITATE INTEGRATED LEARNING

Jane Creaner-Glen and Mary Creaner, Trinity College Dublin

This paper outlines the use of Learning Agreements (LAs) as a valuable learning strategy in the education and training of supervisors on a Masters in Clinical Supervision program. Learning Agreements, as they are presented in this context, are written negotiated agreements between the student and the program. The use of LAs provides opportunities for students to individualise their learning, seeks to promote critical reflection and model the supervisory process in a training framework.

Critical reflection, as a learning activity, facilitates the blending of multiple forms of knowledge and the application of theory to practice (Argyris and Schön, 1974). From its origins in the seminal work of Dewey (1933), Habermas (1971) Schön (1983) and Kolb (1984), reflection has emerged as a powerful technique for facilitating and reinforcing learning. In academic contexts, a key challenge for educators is to structure opportunities for critical reflection and encourage students to engage in reflective practice.

The use of Learning Agreements is based on a number of assumptions concerning adult learning, which relate to adult learners needing to be facilitated to take responsibility for their learning, draw upon previous knowledge and skill in order to optimise plans for future learning.

Learning Agreements assist both course providers and students to navigate the essential knowledge, skills and competencies required in a manner that is congruent for each student while meeting the standards required for Masters level education. They can facilitate integrated learning by taking a 'whole person' approach to the learning experience.

The presentation will outline the steps involved in the process of constructing the learning agreement for adults in education. The contents of a LA will be discussed in terms of reflective practice and how they are used to inform assessment and evaluation will be outlined. Both the benefits and limitations of using LAs in adult learning will also be presented.

Thursday 11h 30 - Houston Theatre

DEVELOPMENT OF A PATIENT SAFETY ONLINE PROGRAMME FOR DOCTORS

Siobhán McCarthy, Ciaran O'Boyle and Dermot O'Flynn, Royal College of Surgeons in Ireland, Alf Nicholson and Ann O'Shaughnessy, Royal College of Physicians of Ireland, Irene O'Byrne-Maguire and Ailis Quinlan, Clinical Indemnity Scheme

Patient safety education and research have been prioritised by the report of the Commission on Patient Safety and Quality Assurance. While progress had been made in other jurisdictions and disciplines, until this initiative, a patient safety e-learning package had not been developed for graduate medical practitioners. The initiative was funded by HSE Medical Education Training and Research (METR) Unit through the Forum of Irish Postgraduate Medical Training Bodies.

The overall aim was to develop a patient safety e-learning programme suitable for Interns, Senior House Officers and Registrars across all medical training specialities.

Representatives of the Royal College of Surgeons of Ireland, Royal College of Physicians in Ireland and Clinical Indemnity Scheme collaborated to develop five core modules. These were based on research, consultation and evidenced based practice. Educational resources needed to build the online elements of the course included storyboards, voice over scripts, case studies and expert interviews. The interagency approach was supported by a document management system.

Each module is interactive, features case studies and practical advice for applying learning in practice. Modules include video footage containing expert guidance from key leaders and

patient safety advocates. Upon completion of the programme, participants complete an assessment to reinforce learning.

Outcomes include increased awareness of patient safety and risk management among graduate medical practitioners; improved access to patient safety education, considering the geographic spread and commitments of healthcare professionals and successful collaborative response to the recommendations regarding patient safety education in the Report of the Commission on Patient Safety and Quality Assurance.

Thursday 11h 50 - Houston Theatre

STUDENT SERVICES, A KEY ASPECT OF THE PROVISION OF FLEXIBLE LEARNING IN HIGHER EDUCATION INSTITUTIONS

Josephine O'Donovan and Terry Maguire, Institute of Technology, Tallaght

Nationally there is a move in Higher Education Institutions to provide a more flexible approach to teaching and learning for students. In the main, the focus of many of the developments centre on the provision of academic 'Flexibility' e.g. the provision of LMS systems, choice in timetabling, availability of podcasts, distance learning opportunities and the use of webinars.

However the student experience is not only determined by the academic interface but also by the level and quality of the student services that are available. Over 40% of the student cohort at the Institute are part-time learners. Consequently ITT Dublin has taken a more holistic approach to the development of 'flexible' provision for students. The Institute has adopted a strategy that develops the flexibility of academia and student's services in tandem.

This paper will discuss the Institute's strategy in relation to developing 'flexibility'. It will describe the flexibility of student services that are under development; in particular it will focus on the development of the web payments system for students and situate this in the wider context of an holistic strategy for flexible learning for students.

Thursday 12h 10 - Houston Theatre

USE OF LABORATORY-SCALE WASTEWATER TREATMENT PLANTS FOR UNDERGRADUATE RESEARCH, TRAINING AND TEACHING

William Fitzgerald and Lil Rudden, Institute of Technology, Sligo

As part of an undergraduate programme in Environmental Science, students undertake modules relating to Wastewater Treatment as well as Environmental Analysis. Traditional teaching methods generally involve conducting each analytical method on one or two occasions, with samples either made up or sourced by technical support staff. Site visits to full-scale treatment systems help students "visualise" the issues involved in the design and operation of "real systems" but detailed on-site investigations are not possible or practical for many reasons (i.e. class size, costs, health and safety issues, access etc.)

This study involves the establishment of teams of students responsible for the maintenance, operation and monitoring of bench-scale activated sludge wastewater treatment plants on a continuous basis over an academic semester. The students work in teams of four per bench-scale unit and conduct a series of analyses on at least four occasions over a two-week period. Students then rotate between duties until they have each completed the entire range of maintenance and analytical tasks. The analytical data generated over the duration of the trial is used to monitor the performance of the units. It enables students to collate the data in tabular and graphical form, and carry out statistical analyses. In addition, students are able to identify and explain the important inter-relationships between numerous factors relating to the design and operation of wastewater treatment systems which cannot be achieved using existing teaching methods. The students upload the monitoring results onto a website, as they become available, which is accessible by students from other courses including distance learners.

Responses from the students and staff involved in this project were very positive and this has led to implementing changes to the curriculum whereby a Project module has been removed and the learning outcomes integrated into the Wastewater Treatment module.

This project has potential for transfer to similar programmes in other Institutions.

Thursday 12h 30 - Houston Theatre

BUILDING BRIDGES INSTEAD OF WALLS: ACADEMIC PROFESSIONAL DEVELOPMENT THROUGH INTER-INSTITUTIONAL COLLABORATION

Nuala Harding, Athlone Institute of Technology, and Marion Palmer, Dún Laoghaire Institute of Art, Design and Technology

Athlone Institute of Technology (AIT) was commissioned by LIN to validate a Certificate in Learning and Teaching (10 ECTS at Level 9) in 2008-2009, in order to provide participants the opportunity to develop in key areas of learning, teaching and assessment, taking cognisance of the potential and challenges of blended and distance learning. A pilot was conducted in 2009-2010 in both AIT and IADT. Implementing an accredited programme within one institution is a challenge; piloting concurrently across two institutes was an achievement.

The planning and implementation of the programme from September 2009 to March 2010 is outlined and critiqued in this paper. Approaches to programme team organisation and the backgrounds of the parallel programme teams are discussed. Both institutes operated a similar programme schedule with the programme team in each institute sharing the planning of sessions equally. Use of a wiki as a collaborative tool to coordinate session planning and sharing of resources is reviewed in addition to the use of a virtual learning environment to enhance student learning. The challenge of working with peers as students and the impact of a team teaching approach are addressed.

Analysis of learner profiles, participation and data from an electronic survey designed to capture qualitative and quantitative indicators of the considered approach taken was worthwhile. All students were awarded the certificate. Feedback from the external examiner was extremely positive and supportive. The inter-institute cooperation, particularly between the two programme coordinators which was a model for peer review is documented. The

attitude and support of senior management at both institutes was essential to the success of this initiative.

This unique collaborative project achieved a positive outcome for learners, programme teams and partner institutes. This pilot has the potential to impact on the HEI landscape as a model for collaboration and innovation in academic professional development.

Part 5:

Conference Posters



TECHNOLOGY ENHANCED LEARNING

1. IMPLEMENTING E-LEARNING IN HE: DISTINGUISHING MYTHS FROM REALITY

Saif Al-Araimi, University of Bath

E-learning is a very useful and powerful tool when properly implemented. However, having a big budget and a reliable IT department are not enough to create a successful e-learning project. Not realising this when e-learning was first introduced to the educational field cost Higher Education around the world more than £200 million between 1988 and 2006. It is therefore essential for e-learning projects managers to distinguish between myths and reality when it comes to the implementation of e-learning systems. It is also necessary for them be aware that e-learning differs from technological gadgets and distance education. Studies have indicated that there are basic conditions that e-learning systems need to comply with for them to be more accepted by users. Studies have also revealed that there are plenty of organisations that gave up their e-learning dreams sometimes because of complete failure and other times because of the projects not meeting the desired targets. Hence, it will be the aim of this paper to address the issues surrounding successful management and implementation of e-learning systems and how to best make use of them.

2. USING STUDENT DESIGNED WIKIS AS OPEN ACCESS RESOURCES

Hannah Barton and Christine Horn, Dún Laoghaire Institute of Art, Design and Technology

This poster introduces a simple way to combine pedagogical and technological innovations to enable students to fully engage with course content. A wiki assignment was set in a second year module Personality and Psychometrics, which is currently being taught in the Institute of Art, Design and Technology in Dublin, Ireland. This active learning experience divides students into small, groups of between 5 and 7 students who design their own content from the readings during the class, and create Wikis, thus enabling the students to be the architects of their own knowledge of the course material.

The benefits of enabling students to be the creators of their own knowledge compared to the traditional lecture format included increased cooperation among group members while creating the summaries. This innovative approach allowed students to manage their own learning and catered for the diverse learning styles of the students by allowing the material to be available in a multi sensory format through the wikis. Students reported better understanding and retention of the material. Students were granted access to each other's wikis and were able to use the wikis for revision for exam purposes. Feedback about the creative element to the activity, which really engaged the students, will be presented as will issues of technical training and support. The benefit of being able to use the wikis as revision resources was cited by the students as the main advantage of participating in the assignment. Examples of the student wikis will be highlighted as open access learning resource repositories which be shown.

[Link to Poster](#)

3. USING PREDICTION MARKETS TO ENABLE ACTIVE LEARNING IN LARGE GROUPS

Patrick Buckley, John Garvey and Fergal McGrath, University of Limerick

In this paper, prediction markets are presented as an innovative pedagogical tool which can be used to enable active learning in a wide range of disciplines, particularly in business and the social sciences. Prediction markets are a novel decision making tool which are designed to make forecasts about specific future events by using a market mechanism to aggregate the information held by a large group of traders about that event into a single value. When combined with Information Technology, the specific attributes of prediction markets means they are particularly useful in enabling active learning in large groups, where traditional pedagogical approaches can incur prohibitive administrative overheads.

Our core insight is that prediction markets can be used to create decision scenarios which are linked to real-world events. The advantages of this approach in the cognitive and affective domains of learning are discussed, while the advantages to teaching staff are also described. The unique ability of prediction markets to enable active learning in large group teaching environments is explored. Building on this theoretical work, a detailed case study is presented describing how a prediction market can be deployed as a pedagogical tool in practice. Empirical evidence is presented demonstrating the effect prediction market participation has on learners in the cognitive and affective domains of learning. Finally, such suggestions for further research are presented.

*This research was financed in part by a generous grant from NAIRTL.

4. A PROPOSED SOFTWARE MODEL TO ENHANCE LEARNING AND TEACHING BY INTEGRATING ASSESSMENT, FEEDBACK AND INSTRUCTION

Robert Cleary, Stephen Cleary, Griffith College Dublin, and Davide Susta, Dublin City University

World leaders in the field of educational research have identified the need for eliminating misconceptions in learners attending educational courses. Similarly, the value of instant, rich feedback is widely recognised. A software model is proposed for the development of a tool to eliminate misconceptions in the learner, and in parallel, identify (at an institutional level) intended learning outcomes (ILOs) causing collective difficulty to learners. The model is designed to identify areas of teaching which may be causing such misconceptions. The model extends an earlier proposed model for integrating assessment, learning and instruction.

[Link to Poster](#)

5. AN EXPLORATION OF THE POTENTIAL OF A VIRTUAL WORLD TO SUPPORT TEACHERS' PREPARATION FOR TEACHER PROFESSIONAL DEVELOPMENT USING AN ACTION RESEARCH APPROACH

Linda Darbey, National Centre for Guidance in Education

This research explored the potential of Virtual Worlds (VWs) to provide an immersive, collaborative experience to facilitate guidance counsellors' progression through modules of Teacher Professional Development (TPD) using an action research approach. Practice based evidence identified contextual challenges that previous participants faced when progressing from an introduction module to an intermediate one limiting their experience of the module.

VWs support a constructivist approach, and potentially an action research approach, to learning through the affordances offered by the environment (Dickey, 2003; Dalgarno & Lee, 2009). This study involved guidance counsellors undertaking a number of activities and participating in two facilitated practice based discussions in Second Life (SL) supporting constructivist and action research approaches to learning. The activities and practice based discussions employed an action research approach to explore the status of guidance planning in participants' schools enabling them to identify areas for development. The discussions took place in a virtual school to increase participants' immersion in SL and to facilitate the transfer of learning to the school context.

The research employed a case study approach involving three guidance counsellors working in post primary schools and two facilitators. All participants were geographically dispersed. The data collected included interviews, questionnaires, unstructured observation and content generated by the guidance counsellors for display in SL.

The findings of the research highlighted the potential of SL to support an action research approach to TPD and to address some of the challenges facing TPD. In addition, it was found that SL has the potential to provide an immersive experience for supporting geographically dispersed teachers in their preparation for TPD. Challenges identified were the need to address technical issues (support and access), and the lack of non verbal cues when facilitating discussions in SL. Future research could focus on integrating SL into a TPD programme using an action research approach.

6. DEAF AWARENESS: AN INTERVIEW WITH AN EXPERT

Eva Doherty, Frances Meagher, Bryan Butler, John Quinlan, Ray Lohan, Royal College of Surgeons in Ireland, and Cathy McCormack, Trinity College Dublin

Deaf people frequently encounter communication difficulties with health professionals. The Faculty of Medicine and Health Sciences at RCSI has recently launched the Medical Graduate Profile (MGP) in which the ability to communicate with deaf people is listed as a core competence. To achieve this outcome in the medical curriculum, an eLearning video resource has been recently developed. The resource is available to all students on the communication skills resource centre on the college's virtual learning environment (VLE) (Moodle) and is taught during the Essentials in Clinical Practice (ECP) module in the final medical year. The format is designed to appeal to a young audience whose viewing preferences are oriented towards brief, informative, magazine-style featurettes. The format of the feature is presented

as a 'chat-show' between an interviewer (a doctor) and an interviewee (expert on deaf awareness) and discusses aspects of the deaf culture and language and gives important tips for effective communication. Each featurette is presented according to a FAQ format and thus students can work through the questions according to their own learning requirements. The resource has been developed using Adobe Flash and HTML and is the result of a collaboration between RCSI staff from a number of academic and non-academic departments and an expert on communicating with deaf people from Trinity College Dublin. Samples of the featurettes will be presented. This eLearning video resource illustrates the benefits of using a VLE such as Moodle to address specific communication skill learning outcomes in the medical curriculum.

[Link to Poster](#)

7. HIGHLIGHTING THE NEED FOR ANAESTHETIC/INTENSIVE CARE TEACHING TO MEDICAL STUDENTS IN AN ERA OF PROBLEM BASED-LEARNING (PBL)

Edel Doorley and J. McCann, Aintree Hospital, UK

Anaesthetics/Intensive care medicine is an integral part of medicine today with changing population demographics. Teaching of these core subjects however lacks clear guidelines with many medical students having poor knowledge of these essential topics, largely due to the lack of teaching with the advent of PBL.

Twenty-five 4th-year medical students were invited to attend a day's tutorial on anaesthetic/intensive care topics- namely acid-base disturbances, post-operative dyspnoea/shock and fluid management. Students completed the same questionnaire before and after the teaching to assess its benefits.

Students in this study had clear deficiencies in their basic knowledge of anaphylaxis, fluid resuscitation and pain management with only 30 % (n=78/240 questions) answering questions correctly before intensive lectures. Student's competency of knowledge rose dramatically to 99% (n=237/240 questions) on these subjects following some basic anaesthetic teaching and encouragement in a flexible and familiar environment.

Junior doctors regularly encounter medical problems on wards in terms of post-operative pain/fluids and dyspnoea. If we are to confidently leave these new doctors to manage our patients appropriately, we should equip them with the necessary knowledge and teaching to do so.

Anaesthetic/Intensive care knowledge is often best imparted in the form of medical lectures to students to compliment their PBL learning, often in the form of flexible teaching lectures/ward work.

8. EVALUATION OF A WEB BASED SOFTWARE TOOL TO ASSESS INDIVIDUAL CONTRIBUTION OF GROUP WORK

Darvree Downey and Maeve Scott, Institute of Technology, Tallaght

CATME is a free-to-use web-based survey (www.catme.org) that was developed to enable self- and peer-evaluation of individual contribution to group work. The project was designed to assess the effectiveness of CATME for use with full-time and part-time undergraduates in science in ITT Dublin. Students within classes were grouped together randomly in groups of three or four. Previous experience of group work evaluation had highlighted student and tutor difficulties in evaluating contribution to group work.

The tutor sets up a survey for each group which asks questions under a range of categories including contribution to the workload and interaction with the rest of the group. On registering with CATME, a student fills out this survey. Based on the answers given, CATME generates a group adjustment factor for each individual which can be used to adjust assessment marks to reflect individual contribution. In addition, the tutor has access to comments made by students. CATME also highlights anomalous results where there is a high degree of intra-group disagreement in the evaluation figures.

Evidence from narrative reflections and interviews suggested the CATME scores correctly indicated individual contribution to group effort. Poor usage levels by some groups indicated the necessity of making compliance mandatory. Initial results suggested full-time students were more reluctant to give a negative assessment of their peer group contributions than part-time students, suggesting a maturity-effect. This difference was however less evident in subsequent surveys. Improvements may be attributable to greater tutor awareness leading to better CATME-usage training.

CATME was found to be a useful tool for the summative assessment of individual contribution to group work. Its potential for formative feedback was evident but not fully explored.

[Link to Poster](#)

9. USING PODCASTING IN VLE – WILL STUDENTS ENGAGE?

Alison Egan, Marino Institute of Education

The impact of podcasts on engagement with a virtual learning environment is explored in this paper.

Will user generated podcasts create a community of practice? Will creation of user generated content give pre-service teachers ideas for using technology in their future classrooms?

The artefact design is influenced by previous research on blended learning undertaken by Garrison (2004), Dalsgaard (2007) and Keller (2008). Also influential were the works of Ioannou-Georgiou (2006) and Harris (2008) who used podcasting and personalisation of technology to promote knowledge sharing, and Lave and Wenger (1998) and Lee (2008) who looked at communities of practice and whether they can be formed by user generated content.

The researcher created a blended course delivered in Moodle using HTML pages, podcasting, SCORM and user generated content. The overall focus of the research was on engagement with the podcasts embedded within a VLE. The major sample, termed the EAL Group, was measured on their interaction with all elements of the online course. The multimedia content was linked to other course materials released to students over an eight week period. A sub-group of the EAL Group, termed the Podcast Group, continued to interact with the VLE over a further five week period, and created their own user generated podcasts.

Using a case-study approach, the research undertaken was of a qualitative and quantitative nature.

The findings confirm that EAL Group engaged with the blended learning environment and liked the podcasts, but also revealed that time spent online is not comparable to traditional face-to-face courses.

A requirement for mandatory IT training for pre-service teachers has been identified as a result of the study including creation of podcasts and submission of these to the VLE as part of the assessment criteria of future online courses.

10. TEACHING LEGAL WRITING ONLINE

Elaine Fahy, Jennifer Schweppe, Larry Donnelly and Rónán Kennedy, Dublin Institute of Technology

Legal writing and research are fundamental skills for lawyers, both professional and academic. While neglected in the past, legal writing and research is fast becoming one of the most fundamental elements of any Law School curriculum. In teaching the subject, the authors have identified two major difficulties.

First, traditional classroom based teaching approaches are no longer feasible for the teaching of Legal Writing and Research as they require a significant commitment of staff time, particularly as student numbers increase. Systematic teaching of legal writing requires continuous revisiting of basic issues, something which is not appropriate in a classroom but which can be achieved with much less resources and, significantly, no embarrassment to the student through software. Online delivery allows the student to proceed at her own pace, revisit difficult areas repeatedly as necessary without drawing attention to herself, and receive immediate and accurate feedback on what are often very technical skills.

Second, in teaching Legal Writing and Research in Ireland, one is immediately hampered by the unavailability of a text which is Irish based and focused. One must instead make use of books written for other jurisdictions, chiefly the UK and US. These are often dated, contain material not applicable to this jurisdiction and do not cater for technologically-savvy students.

In response to these challenges, the authors have been working to create a unified set of teaching and learning materials for legal writing and research. This will be shared across a number of Irish third-level institutions (the University of Limerick, Dublin Institute of Technology and the National University of Ireland, Galway), with a significant Web-based component, promoting student centred learning and flexible teaching and learning of

transferable core legal skills. The authors will explain the background to the project, demonstrate the Web site and outline planned future developments.

[Link to Poster](#)

11. ENHANCING THE LEARNING EXPERIENCE USING WEB 2.0 TECHNOLOGIES

Michelle Flood, J. Strawbridge, A. Morgan, L. Feeney, P. Gallagher and S. Pitman, Royal College of Surgeons in Ireland

Web 2.0 technologies are increasingly being used in the provision of online and blended learning. The technologies encourage and facilitate collaboration, reflection, generation of information and sharing of knowledge.

Two elements of Web 2.0 technology were introduced to enhance the learning outcomes of second year pharmacy students in the module 'Patient Care and Safe Dispensing'. The first, an interactive online learning forum, introduced the students to real-life problems. A photograph of a 'problem' prescription, taken to preserve anonymity, was uploaded on a weekly basis. Students then discussed the problem on-line in small groups. The second element was the creation of an E-portfolio to enable the students to record their professional competencies and reflect on their experiential learning.

Student evaluation of the elements was conducted via an online survey. A response rate of 70% (n=36) was achieved. The majority of students found the learning forum helped them link theory with practice, integrate material from across the module, and develop their problem-solving skills. The majority also liked the forum as a learning tool and thought it took an acceptable length of time to complete. The introduction of the E-portfolio yielded a mixed response. The majority of the students did not like the e-portfolio as a learning tool, but felt that using the reflective diary section helped them become aware of their strengths and weaknesses in their knowledge, skills and attitudes and helped them learn from their experiences. These findings were in keeping with the literature, which suggests that students struggle with self-assessment and find reflection challenging.

Web 2.0 technologies, introduced in line with constructivist learning methods, allowed student flexibility, promoted learner-centred processes, and enhanced the learning experiences of the students. The technologies will now be utilised in the related modules within the spiral curriculum.

12. MAXIMISING ENGAGEMENT AND KNOWLEDGE TRANSFER IN LARGE CLASSES

Majid Ghanbari and Theresa Bradley, Limerick Institute of Technology

The majority of students in the Institute of Technology sector are considered to be active learners (O'Brien, 09); so incorporation of formative assessment and feedback could be a suitable approach to increase engagement and motivation in students. At the same time by using a selection of carefully designed questions in classroom as well as in the form of

homework and assignments, it is possible to enhance understanding, engage students in critical thinking, improve their problem solving skills and promote higher order thinking (Bloom's Taxonomy). This strategy encourages students to put forth more effort. It gives them opportunities to practice and it provides them with feedback on their performance.

At present research is being carried out into the use of classroom response systems (clickers) to increase students' participation in discussion and concurrently to help students to develop a more effective and efficient process of producing knowledge by using well-constructed "good questions". Using clickers enables us to get all students involved and have feedback from all regardless of the size of a class. Results of pilot tests are encouraging and interventions are now being designed to implement in the coming academic year.

[Link to Poster](#)

13. THE EFFECTIVENESS OF DIGITAL TECHNOLOGIES IN HIGHER EDUCATION LECTURES

Kerry Greer, Deirdre Ryan, Donie Kelly, Elaine Vaughan, Michelle Glasheen, Aoife McLoughlin and Lorraine Whisker, Mary Immaculate College

There is increased pressure on University Lecturers to incorporate audio/visual digital technologies (e.g. podcasts) into their teaching. The existing small, but growing body of published research in Higher Education is predominantly focussed on studies of perceived value, usage of the technology, and podcasts as supplementary teaching material (McGarr (2009); Baker (2008); Lazarus (2008)).

The motivation for the current research was to evaluate the academic effectiveness of digitised lecture delivery in both Real Time (Live Streaming) and Delayed Time (Podcasts). Academic Effectiveness was operationally defined as the performance on tests designed to explore the degree of academic comprehension/retention of lecture material.

The participants were first year Social Psychology students (n=157), randomly assigned to one of three conditions of lecture delivery. The three methods of delivery were live lecture (n=65), screened lecture in lecture theatre (n=69), and lecture delivered to individual work stations (n=23). The lecture was of 30 minutes duration, the topic chosen was unlikely to be familiar to the students and deemed to be conceptually difficult.

Academic performance was tested using an MCQ test with both factual (3) and conceptual questions (2) administered following the lecture delivery. Student experience of the lecture was extracted from a Learning Experience Feedback Questionnaire (LEFQ).

A Kruskal Wallis test indicated significant differences in academic performance across the three delivery methods ($\chi^2(2, N=157) = 22.14, p < .001$). Examination of the descriptive statistics suggested that those students at the screened lecture had poorer results on the MCQ test than those in the other lecture delivery conditions.

The results of the study indicate that type of delivery can impact greatly on academic effectiveness. Factors to be controlled and/or manipulated in future studies include one/two way interaction with students, duration of digitised instruction, and repeat exposure.

14. EXTENDING THE CONCEPT OF FLEXIBILITY – A FLEXIBLE MODEL FOR ALL

Fionnghuala Kelly and Kevin O'Rourke, Dublin Institute of Technology

The development of a flexible learning experience does not have to stop at providing learning that can be accessed by the learner at any time, in any place, and at any pace. Flexible learning has the potential to be beneficial to all those involved in the learning experience. Flexible learning modules are currently being developed within DIT to support Academic Professional Development. These modules reflect the components of the Postgraduate Diploma in Education currently delivered in a blended learning environment. These flexible learning modules are being designed in a way that can support a range of deliveries. Each stand alone module can be delivered as an online learning experience. Alternatively, the module can be used as a resource for lecturers in face to face delivery, or finally, as a resource for students to support their face to face and blended learning experiences. The modules are web based and contain the course material, reflective exercises, activities and links to useful documents and websites. They are underpinned by constructivism (Dewey, Piaget, and Bruner) as they encourage through the activities, reflections and self-directed learning options an opportunity to actively construct new knowledge based on prior experience. The modules can be expanded by the lecturer to encompass extra activities such as collaboration or reflective journals by using tools available within a VLE or open source resources. The assessments required for measuring learning can also be added to the module by the lecturer as and when required. One completed module "The Psychology of Learning" is currently being piloted as a support resource for students and as a resource to lecturers for preparing their delivery. This module will be showcased should this abstract be accepted.

[Link to Poster](#)

15. FINANCIAL ACCOUNTING STUDENT E-LEARNING RESOURCES (FASTER)

Orlaith Kelly, Athlone Institute of Technology

This presentation will describe an initiative originated by two lecturers in Athlone Institute of Technology (AIT) to develop a more open and flexible approach to teaching financial accounting. It will discuss how, with the help of the NDLR and local Learning & Teaching units, a small localised project with a specific goal of using technology to enhance flexibility has grown into a collaborative 'open education' project between three Institutes of Technology and a professional accountancy body.

Initially, both lecturers (i.e. Orlaith Kelly and Luke Fannon of the School of Business in AIT) wanted to enhance the usefulness of Moodle for delivery of their full time introductory financial accounting courses by producing reusable accounting resources that would offer increased flexibility and content as part of a blended learning/teaching approach. In 2009 funding was received from the NDLR for the project and the focus grew to encompass open educational resources.

The deliverables of the project were to produce a series of accounting videos (Camtasia screencasts), a bank of online accounting questions and question/answer sheets. The target groups of the project were first/second year students in third level institutions studying

financial accounting. These resources were presented at the NDLR Fest 2010 and can be viewed on the NDLR repository.

Following on from discussions with interested lecturers at the NDLR Fest, a joint funding application was made to the NDLR in 2010 by AIT, IT Carlow, Dundalk IT and CIMA. This new collaborative undertaking aims to improve on the initial project by using Articulate Studio to create financial accounting e-learning resources.

This presentation (which ties in with the Technology Enhanced Teaching theme) will demonstrate the initial resources produced and contrast these with the Articulate resources, highlighting why Articulate is felt to be an improvement. Student feedback will also be reviewed.

16. THE USE OF CLASSROOM RESPONSE SYSTEMS AND MULTIMEDIA PRESENTATIONS TO ENHANCE TEACHING AND LEARNING IN FIRST YEAR PHYSICS

Regina Kelly, Limerick Institute of Technology

The purpose of this study is to investigate the use of technologies including classroom response systems and multimedia presentations to enhance teaching and learning in first year physics. Draper & Brown claimed appropriate use of the response pad systems can increase interactivity by provoking students to think, making them feel secure enough to answer questions anonymously, and increase their confidence in their own learning capacity. A related aim is to systematically integrate the contrasting delivery modes of lectures and laboratory practical for physics in order to develop the students' conceptual understanding of physics in relation to physics laboratory experiments. To do this, a range of learning objects and instructional aides will be developed to help students to explore physics concepts and to develop their understanding of these concepts.

A mixed methods design format will be used for this research project. A combination of qualitative and quantitative analyses will be carried out using the following testing instruments: surveys, questionnaires and pre- and post-testing. This approach requires that the qualitative and quantitative data gathering will take place over the same testing time.

The results should indicate if using technologies will enhance teaching and learning in first year physics and if by contrasting delivery modes of lectures and laboratory practical for physics can be better integrated in order to develop students' conceptual understanding of physics. Positive preliminary survey data was collected during a piloted use of response pads systems in two first year physics classes implying that they can enhance their learning.

[Link to Poster](#)

17. LITERATURE REVIEW ON THE UTILISATION OF VIRTUAL LEARNING ENVIRONMENTS IN FACILITATING MATHEMATICS TEACHING AND LEARNING

Jonathan Lambert and Frances Sheridan, National College of Ireland

The shift toward any-time any-place any-pace learning raises new challenges for the teaching of mathematics within higher education. Compounding these challenges are issues relating to student ability and mathematical dexterity as well as the constant drive to remove mathematics as a barrier to progression, in particular, for those students pursuing a computing or business programme.

Key to smoothing this shift is the availability of digital resources, the use of Virtual Learning Environments and the exploitation of their capabilities.

In this paper we present a review of the state-of-the-art with regard the utilisation of the Virtual Learning Environment (VLE) Moodle, as a medium to facilitate any-time any-place any-pace mathematics teaching and learning. In particular, we present an overview of the capabilities of the Moodle VLE for the design of adaptive self-directed learning modules and the facilitation of assessment. We also present a thematic review of the literature associated with mathematical assessment and the use of the adaptive capabilities of VLEs.

This work will inform future teaching strategy on the use of best practices with regard Virtual Learning Environments.

[Link to Poster](#)

18. FORMATIVE FEEDBACK USING DIGITAL AUDIO TECHNOLOGY

Brendan Lyng, Waterford Institute of Technology

Final year students of a BSc in Software Systems Development are required to construct a case study of a technology company over the course of one 12 week semester. The case study is divided into six chapters, submitted on a fortnightly basis for formative feedback. Overall marks have increased since the introduction for prompt and regular formative feedback, but the process does not scale well as student numbers increase. In an effort to reduce the time given to formative feedback without suffering any loss to the student, the module lecturer has replaced typed feedback with audio, using digital audio technology to record spoken word feedback. Audio files are distributed to students using Moodle.

Two alternatives have been successfully used:

1. Lecturer's voice is recorded using the iPhone
2. Audio file is uploaded to iTunes
3. Audio file is located on the PC/Mac using Get Info command
4. File path is copied
5. Using the Grading feature in Moodle, the audio file is uploaded using the Browse File option
6. Student listens to feedback whilst browsing through their submission.

Alternatively a PC headset with microphone can be purchased. Audio is recorded using Windows's built-in Sound Recorder. The file is opened in Audacity, a free software product, and edited if necessary. The file is saved and uploaded to Moodle.

Audio feedback possesses a number of advantages over typed feedback:

1. It is much faster to record audio feedback. This is particularly beneficial when large numbers of students are making submissions.
 2. Students can listen to feedback and whilst browsing their submission. This was singled out by students as the primary reason for their preference for audio feedback.
 3. Vocal tone, cadence and inflection are lost with written and typed feedback.
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19. AN INVESTIGATION INTO THE EXISTENCE OF BARRIERS AFFECTING VLE ADOPTION IN WIT

Richie Lyng, Waterford Institute of Technology

Moodle is a free open-source e-learning software platform also known as a Virtual Learning Environment (VLE). It is generally used to manage courses mainly in third level educational institutions and training environments. VLEs such as Moodle have been installed in most Irish higher education institutions and are an integral part of blended or distance learning. Learners may log into the system to view course content, interact on forums, and complete assessments. Proponents of VLEs claim that they increase flexibility, save time and resources, improve communication, reduce administration, and promote collaboration. Despite these supposed benefits, some lecturers in WIT have not adopted the technology. This research investigates why this is the case, asking if undocumented barriers are preventing staff from adopting Moodle. E-learning and technology adoption literature were reviewed and typical adaption barriers were identified. A technology acceptance model called the Unified Theory of Acceptance and Use of Technology (UTAUT) model was employed to detect adoption barriers. A mixed-methods questionnaire was designed based on the UTAUT model which included mainly likert scale quantitative questions and three open-ended qualitative questions. The questionnaire was distributed to all teaching staff in WIT via email and non-Moodle users were asked to complete it. The results were collected and the quantitative data was analysed using a statistical package. The qualitative data was also analysed and a number of themes emerged. The analysis presented some very interesting findings with issues relating to intellectual property rights (IPR), training, support, computing experience, time management, student attendance, effort expectancy, and managerial encouragement/acknowledgement all emerging. The research concluded with a set of recommendations to address these issues. This research is of interest to anyone involved in e-learning research, VLE management, or technology adoption research.

[Link to Poster](#)

20. A BLENDED LEARNING APPROACH TO TEACHING BIOMEDICAL DIAGNOSTICS

Aoife McCormack, Anne Morrissey, Emma O'Brien, and Morag Munro, Dublin City University

Developed by the Biomedical Diagnostics Institute (BDI) in response to the needs of the Irish Diagnostics Industry, the M.Sc. Biomedical Diagnostics programme is a unique multi-

disciplinary graduate training programme merging academic training modules with industry insight and analysis. The programme is a one-year, full-time course that has been running since 2006. Students come from a variety of backgrounds and first complete an introductory module in the basic sciences underpinning diagnostics, before moving on to more advanced modules in immunology and genetics. One of the modules includes a Nanobiotechnology course video-conferenced live from Cornell University.

To add further flexibility into the delivery of the programme, a blended learning approach is being introduced by the inclusion of other e-learning technologies. This new flexible learning environment is intended for students who wish to complete the course part-time and for industry personnel who wish to upskill through stand-alone modules. Full-time students can also take the modules to revise material and update their skills. The change to a blended learning delivery format is being designed and developed by the BDI in collaboration with Oscail and the Learning Innovation Unit at DCU.

This presentation describes the motivation for this change and the preliminary work carried out to develop the on-line versions of the modules using the e-learning technologies Moodle and Camtasia. It concludes with an evaluation of the process.

[Link to Poster](#)

21. OVERCOMING TIME, PLACE AND PACE: USING TECHNOLOGY TO SUPPORT LEARNING BY MATURE EVENING DEGREE STUDENTS

Simon McGinnes and Florence Dowling, Trinity College Dublin

Increasingly, mature students are entering higher education, yet the teaching and administrative practices in traditional universities strain to adapt. Trinity College's evening degree in Information Systems (IS) is an example. With average age 31, many students have young families, busy jobs and long working hours. To get their degree they attend lectures for 3 hours, 3 nights per week for four years. As experienced professionals the students learn much from each other and value the opportunity for collaboration with their peers. Yet the attendance requirements impose stress, especially as job insecurity and traffic congestion grow. Moreover, Trinity College's operations are geared to daytime students, so that evening students can find it difficult to access services. This paper discusses measures taken in Trinity's IS programme to help evening students participate more successfully in education. Innovations include self-study e-learning, online discussions, podcasting lectures, adaptation to services and use of social computing techniques. The aim has been to increase learning flexibility and choice - particularly over time, place and pace - whilst retaining the all-important "Trinity experience" and reinforcing the programme's valuable collaborative nature. We found that, while it is easy to envisage and plan such improvements, structural change in a well-established higher education institution is more difficult. It was relatively simple to introduce the technology, but harder to alter mindsets and practices - including those of students. Most would agree that flexibility in learning is a good idea and we have been encouraged by our limited successes to date. But our experience suggests that it is the non-technological factors - cultural, perceptual and organisational - which present more formidable barriers to introduction of technology-enhanced learning in the traditional university. Although difficult to achieve, a holistic approach to the whole organisation is needed, attending to diverse factors including processes, assumptions, regulations, services and methods - as well as technologies.

22. THE ESTABLISHMENT AND EVALUATION OF A NATIONAL ONLINE CLINICAL TESTING REPOSITORY FOR SURGICAL TRAINEES AND STUDENTS

Seamus McHugh, Mark Corrigan, Athar Sheikh and Arnold Hill, Royal College of Surgeons in Ireland, Elaine Lehane, University College Cork, Conor Shields, University College Dublin, Paul Redmond, Cork University Hospital, and Michael Kerin, Galway University Hospital

We aimed to develop a new teaching strategy for medical students while creating a national online repository system (Surgent University). We then evaluated the potential of this e-learning modality to facilitate clinical surgical teaching.

An online repository and internet-based interface was designed and hosted on the medical education website www.surgent.ie. Participation was by medical students across three Irish universities. Participating medical students on surgical rotations were asked to upload facts attained through clinical teaching at the end of every day. They then peer-reviewed facts uploaded by other students, with reference to published literature. Student usage of the repository was quantitatively assessed over an eight week period. They were then invited to complete an anonymous survey assessing effectiveness of the online repository. Statistical analysis was performed using SPSS v15 with $p < 0.05$ considered significant.

Over the study period the online repository received 6,105 uploaded facts by 182 final year medical students from the three different universities. The repository web pages were accessed 54,061 times with 4,609 individual searches of the repository. Of the 60 participating students invited to provide survey-based feedback there were 40 respondents, giving a 67% response rate. Of those surveyed, 70% ($n=28$) rated the online repository as highly beneficial and 75% ($n=30$) as highly relevant. Overall 87.5% ($n=35$) felt that it should be continued, and 70% ($n=28$) felt that it should be expanded beyond surgery to include other hospital specialities. Those who found the programme interface user-friendly were more likely to find it beneficial ($p=0.031$) and relevant to their ongoing medical education ($p=0.002$).

A user-friendly interface allows for high levels of usage while a 'student-centred' structure ensures that the facts uploaded are beneficial and relevant to medical students' education.

23. A TOE IN THE WATER – REFLECTIONS ON THE ROLL OUT OF A FLEXIBLE LEARNING MODULE IN THE INSTITUTE OF TECHNOLOGY BLANCHARDSTOWN

Daniel McSweeney, Institute of Technology, Blanchardstown

Changing economic circumstances, learner demands and technological advances have been some of the key drivers in the rise of open and flexible learning in Irish third level education. The Institute of Technology, Blanchardstown has begun to respond to the rise in demand for flexible learning and in 2008 it launched its level 7 Bachelor of Engineering in Mechatronics, a part time flexible course which is primarily delivered online, supported by a virtual classroom system.

For any higher education institute, the transition from the traditional model of delivering part time courses to the offering of courses which are delivered in open and flexible mode could be described as a cultural shift. It is a change which not only impacts on lecturing staff but on all staff involved in the support and administration of such courses. For lecturers who are accustomed to face-to-face classroom environments, the delivery and facilitation of learning through virtual classroom environments has provided many challenges, both pedagogical and technological.

This paper provides a reflection on the experiences of staff engaged with the programme and outlines the lessons derived from the process. It provides identification of good practice in areas such as staff development and training, technical infrastructure and student induction.

24. VIEW AND REVIEW: 2D AND 3D

Valerie Morris, T.C. Lee and D. Corrigan, Royal College of Surgeons in Ireland, A. Rankin and A. Korkaram, Trinity College Dublin, and M. O'Dea, Royal Hibernian Academy

Cadaveric-based dissection forms the traditional basis for teaching human structure which is essential to the understanding of normal function, disease and its treatment. Computer technology offers complementary teaching tools to view and review anatomical material in 2D and stereo-3D videos.

Cadaveric dissection was filmed using a digital Canon camcorder in a lighting-controlled room. Final post-production editing of the 2D videos was performed using Adobe Premier Pro software. Audio was re-recorded in a soundproof studio and synchronized with the video summary, which was then exported and compressed using Quick Time Player 7 for fast internet streaming. The five-minute videos and accompanying interactive quizzes are now used to preview and review anatomy practical classes by medical and physiotherapy students in RCSI Dublin and RCSI Bahrain, while the videos are available to surgery and radiology trainees in Ireland and the College of Surgeons of East, Central and Southern Africa.

Stereo-3D surface anatomy videos were filmed in a studio that contained a lighting rig consisting of eight 650W spotlights with a support frame suspended from the ceiling on which the lights were mounted. The stereo-3D camera setup consisted of two Iconix HD-RH1 cameras mounted on an Inition 'bolt' side-by-side adjustable rig. Two pairs of matching lenses were employed: a 4-mm wide-angle lens and an 8-mm lens used for close-ups.

Stereo-3D post-production is ongoing using a newly developed video database designed by our collaborators in the Department of Electronic Engineering, TCD. The videos illustrate key surface anatomical features, muscle movements and sites for clinical examination and intervention using live models and will be used by our medical and physiotherapy undergraduates and form part of the new curriculum for artists in the RHA.

25. IRSIS: INTERNATIONAL RESEARCH STUDENT SUPPORT SERVICE

In the current economic climate where diminished national research funding is encouraging the procurement of grant funding from European and International sources, there is increasing pressure on teaching and research institutes to become more competitive in terms of attracting the worlds best and brightest academic minds. As a result, it is critical to identify the determining factors involved in the decision-making process that leads them to actively pursue opportunities within an institute. One major contributing factor is the support that the institute provides during the student induction process. Unfortunately, these support services predominantly cater for the needs of undergraduate students and not the distinctly different needs of national and international postgraduate and postdoctoral researchers. The overall goal of this project was to develop a pre-arrival support framework for prospective international students, followed by their continued professional development as part of the RCSI research family. This was achieved by the creation of a web-based International Research Student Information Service (IRSIS), developed on the existing RCSI moodle framework and built around their identified needs. The two main aims of IRSIS are to (i) help prospective international researchers find a safe home, make some new friends and understand our culture before they arrive and (ii) develop new international researchers' careers during their time in RCSI (postgrad to postdoc to PI). Currently, the IRSIS initiative has been fully realised from a technical point of view and is currently available to all RCSI research staff and is continuously assessed to improve the quality and content. It is envisaged that this service could be rolled out on a national level to help student induction and relocation, from home or abroad, to any major Irish Higher Education Institute and could serve the student's needs while simultaneously promoting teaching and research in Ireland.

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26. STUDENTS' OVERVIEW: THE IMPACT OF TECHNOLOGY ON LEARNING IN HIGHER EDUCATION

Eileen O'Donnell, Trinity College Dublin

This research explores students' views on the impact and transformations that technology has brought to the learning experience of students in higher education. The students who kindly participated in this study are from: The School of Computer Science and Statistics, Faculty of Engineering, Mathematics and Science, Trinity College Dublin and The Faculty of Business, Dublin Institute of Technology, both based in Dublin City, Ireland. The use of technologies in third level education facilitates flexible learning environments. The pedagogic approach employed by e-learning development officers or lecturers when designing e-learning platforms or learning management systems has the capability to transform student learning. From experience and cases studied there is ample evidence to suggest that the use of technology does not always necessarily meet user requirements. Students are the end users of the technologies educators use to enhance the learning experience. This study was undertaken in two separate third level educational establishments

to compare students' views on the impact that technology was having on learning. The first set of students surveyed in 2009 were studying in the College of Business, Dublin Institute of Technology (DIT), the second set of students surveyed were studying in the School of Computer Science and Statistics (SCSS), Trinity College Dublin (TCD) in 2010. By analysing students views (as the end users) on educators uses of technologies, feedback is now available to learning designers and educators for the purpose of improving the pedagogical design of e-learning platforms and the use of technologies in higher education. The responses received from students clearly indicate they are of the opinion that the use of technologies in higher education beneficially transforms learning but will never replace lecturers. In essence, the benefits that can be achieved through the use of technologies are totally dependent on the ways they are employed pedagogically by lecturers.

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27. INCLUSIVE EDUCATIONAL POLICY: SUPPORTING MAINSTREAM CLASS TEACHERS' PROFESSIONAL DEVELOPMENT

Margaret O'Donnell, Geraldine Hayes, Deirdre MacIntyre and Eileen Winter, St Patrick's College, Drumcondra and ICEP Europe

Equality legislation worldwide requires that educational systems change so that all pupils receive an education appropriate to their needs. Currently, the education system in Ireland is striving to meet the international demand for greater recognition and inclusion of a wider and more diverse group of pupils with SEN in mainstream schools. These changes have put increased demands on the knowledge, skills and competencies of teachers. In order to help teachers meet these challenges, the Special Education Department of St. Patrick's College, Drumcondra, (SPCD) in collaboration with Institute of Child Education and Psychology, Europe (ICEP) have developed a new online Certificate/ Diploma in Education (Special/Inclusive Education).

This programme aims to develop teachers' knowledge, skills and competencies, thus enhancing the provision of appropriate education for children and young people with special educational needs in mainstream settings.

Through the use of technology we are able to make the programme accessible to teachers regardless of location and also to provide a flexible approach to match individual teachers' professional needs by allowing them to choose from a wide range of modular options -to include -Mild General Learning Disabilities, Dyslexia, Challenging Behaviour and Autistic Spectrum Disorders.

Learning in this manner means that the learning is practical, targeted and directly related to a particular pupil or group. In addition, teachers are able to engage in online learning activities that serve to support reflective practice and to develop a community of learners where problems are discussed and ideas and solutions explored.

While in the past the focus has been on providing post-graduate qualifications in support of teachers in specialist positions this is the first attempt, in the Irish context, to upskill mainstream primary and post-primary class teachers in the area of special education.

The programme is highly rated and well-received with many teachers stating that the programme has given them new insights into the teaching and learning of pupils with special

needs; consequently enhancing the teaching and learning of pupils with special educational needs.

This poster session will present on the programme outline, content, and delivery. It will show sample materials of modular content, learning activities and student engagement.

28. USING A WIKI FOR LEARNING AND ASSESSMENT ON A RESEARCH METHODOLOGY MODULE DELIVERED TO PART-TIME LEVEL 9 STUDENTS

Aidan O'Dwyer, Dublin Institute of Technology

This contribution will report on the use of a wiki for learning and assessment, on a 5-ECTS module in Research Methodologies and E-Learning, delivered on a blended learning basis to part-time students taking an MSc programme in Energy Management at the author's college. The module, whose outcome is the development of an individual research project proposal by students, subsequently leads to a 25-ECTS supervised research project. The module is delivered through three face-to-face workshops and the use of a collaborative website (wiki).

The wiki is used as the main co-ordination tool for the delivery of the module, as a repository for course materials and links to learning resources, as a tool to record individual progress in developing a research proposal, and as a collaborative learning environment by the student cohort. The wiki content is also used as part of the module assessment, with 10% of the module credit allocated to the quality of contributions in personal wiki pages developed, and a further 10% allocated to quality of individual contribution to the wiki pages of peers.

The module delivery method has now been used with three cohorts of students over the past two academic years. Student and tutor experiences with the blended learning approach will be detailed in the contribution. In outline, the wiki facilitates learner-centred education, motivates independent learning, is compatible with the student profile and background, and through peer learning unlocks previous work and learning experiences to the benefit of all learners.

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29. THE EFFECTIVENESS OF PODCASTS AS AN ADJUNCT LEARNING STRATEGY IN TEACHING CLINICAL MICROBIOLOGY AMONG MEDICAL STUDENTS

Eoghan O'Neill, Royal College of Surgeons in Ireland

The educational tool of podcasting is just one way in which new technologies are being integrated into medical education. The use of podcasts in the medical curriculum provides the potential for 'anytime, anywhere' learning experiences. To assess the impact of podcasts as an educational tool, the Clinical Microbiology Department in the RCSI carried out a pilot study of third year medical students studying microbiology in the RCSI. The study was carried out over eleven weeks and all 270 students in the year were asked to participate. A 5-8 minute podcast was developed on individual microbiology topics e.g. antibiotic treatment of selected infections. Topics selected were those which the department felt were important to emphasise and formed an adjunct to lectures and tutorials on the topic. A quiz incorporating

ten questions in a multiple choice format were devised for each podcast. Over the eleven week period the podcasts and quizzes were released at various intervals following completion of lectures and tutorials on the topic. Initially students completed a quiz on the topic one day before the release of the podcast. The quiz was then closed and the podcast on the topic released. Following release of the podcast students performed the same quiz five days later. A quiz completion rate of between 45 and 58 percent was achieved for each quiz. Analysis of the quiz results showed that the average result (out of 10) for the pre-podcast quiz was 4.2, whilst the average result for the post-podcast quiz was 5.9. This demonstrated a statistically significant difference in the quiz results pre and post release of the podcast (p -value <0.05). These results establish the importance of podcasts in complementing lectures, tutorials and e-learning to further student knowledge. Podcasting has the potential to enhance medical education by complementing current and future teaching modalities.

30. AUTHENTICITY IN WORKPLACE TECHNOLOGIES TRAINING VIA PRAGMATIC PROGRAMMING

Adrian O’Riordan, University College Cork

This poster describes a new approach to the teaching of workplace technological skills in computing. It also summarizes the experience of applying this to training undergraduates about to start their third year industry placement in Computer Science. By Pragmatic programming [Hunt and Thomas, 1999] I refer to “programming from the trenches”, programming craftsmanship with the tools, techniques of software development today.

The term authenticity [Reeves et al., 2002] is chosen to emphasize the actuality of doing as well as a verisimilitude (truthfulness) to professional practice. This is as opposed to other related approaches such as Reavens’ action learning (which has more of an emphasis on performance), problem-based learning, or inquiry-based learning (which is more open-ended). The focus is on the activities of a programmer as opposed to learning about programming. The tasks are real-world tasks that are sustained over a period of days. This is facilitated by an agile approach to software development, which supports a flexible incremental lifecycle of short activities and review [McAvoy and Sammon, 2005].

The problems need to be sufficiently complex to warrant creative problem solving and all actions in authentic practise should have logical and reasonable consequences. The tools and methods used are those used by professionals. Some tasks are intentionally ill-defined to spur student investigation [Bransford et al., 1990]. Students must work in pairs, but not in larger groups as in many other constructivist learning approaches. Pair programming is a tenet of many agile methods in software development, such as Extreme Programming [Beck and Andres, 2004]. The primary coding technique the students use is refactoring [Fowler et al., 1999] - restructuring code in a disciplined way.

The Workplace Technologies module enabled students to gain practical programming skills with a flexible, tools-based, and agile approach to software development. There was a high-level of engagement by students and a desire to take the work further. The majority of students were able to accomplish a series of complex tasks involving test creation and code restructuring in a tight timeframe.

31. THE DEVELOPMENT OF ONLINE ASSESSMENT IN THE MOODLE VIRTUAL LEARNING ENVIRONMENT (VLE) AS A REPLACEMENT FOR TRADITIONAL WRITTEN ASSESSMENT

Michael O'Rourke, Athlone Institute of Technology

The objective of this project is to examine if online or computer based assessment is a realistic alternative to written assessment. Electronic assessment techniques have evolved considerably in recent years; well beyond multiple choice assessment which is the favoured method in electronic assessment.

In the Moodle virtual learning environment, there are many different types of questions that can be set including multiple-choice, essay, matching, short answer, numerical, calculated, true/false, cloze (embedded), random, drag-and-drop and ordering. Assessments can be devised that include some or all of these question types. Multimedia images and objects may be embedded in questions quite easily. Feedback may be included in questions also.

The project researches continuous and final assessment types with various course groups using the facilities provided in the Moodle VLE. It determines the development effort in terms of time and technical knowledge required by the lecturer to produce the assessments. This can be considerable and a major concern for academic staff.

Limitations of the online assessment questions are examined. The project examines if all aspects of a module, including final exams, can be examined using Moodle assessment, or if it is more suitable as a continuous assessment tool. The experiences of other academic staff that use Moodle are collated via a survey, so as to ascertain the usage of online assessment and attitudes to this concept. The feedback from department heads is collated to determine their views to e-assessment.

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32. USE OF CLINICAL AND ONLINE ASSESSMENT TOOLS OF INTERN COMPETENCE

Muirne Spooner, Eric Clarke, Brady L, Shane O'Neill and Noel Gerard McElvaney, Royal College of Surgeons in Ireland

Assessment of intern competence has traditionally been performed via subjective evaluations from supervisors and mentors. In 2009, Beaumont Hospital piloted the first pre-registration postgraduate assessment for interns.

All interns working in Beaumont Hospital were assessed (n=67). The examination comprised a clinical OSCE and online written assessment comprised of EMQs and MCQs. All assessment tools focused on evaluating competence of commonly encountered intern duties, specifically in management of on-call scenarios, prescription writing and coordination of takeover of care.

Regarding on-call scenarios, a majority of students were able to correctly manage hypertension following stroke (63%), assessment of falls (75%), post operative pain management (65%), neutropaenic sepsis (63%) and hyperkalaemia (56%). However, appropriate management of common emergencies such as hypoglycemia (29%), identification of septic patients (37%) and pre-operative hypertension (19%) was less

optimal. Overall scores in safe prescribing were significantly lower particularly in legal prescribing (8%), prescribing science (35%), and palliative prescribing (22%). The main problem identified in coordination of takeover of care was handover of inappropriate tasks.

Interns are reasonably prepared for commonly encountered on-call scenarios but prescribing competence is a cause for concern.

Takeover of patient care also needs to be formally addressed within the undergraduate curriculum.

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33. NOVEL ONLINE INTER-PROFESSIONAL EDUCATION IN PRESCRIBING SCIENCE FOR PHARMACY AND MEDICAL INTERN AND UNDERGRADUATE MEDICAL STUDENTS

Muirne Spooner, Judith Strawbridge, Eric Clarke, P. Gallagher, J. Kelly and Noel Gerard McElvaney, Royal College of Surgeons in Ireland

Commission on Patient Safety and Quality Assurance “Building a Culture of Patient Safety” noted that poor teamwork and lack of integration of primary care professionals contributed to adverse events in Ireland. The Commission called for multi-disciplinary education programmes at both undergraduate and postgraduate level. The introduction of a new National Pharmacy Internship Programme provided an ideal opportunity for an inter-professional approach to address patient safety.

The Interprofessional Prescribing Science module (15 ECTS) was delivered to postgraduate pharmacy interns, postgraduate medical interns and final year medical students. Baseline competence was assessed. This was followed by an online teaching programme using problem based clinical quizzes, evidence-based e-tutorials, a discussion forum and links to research resources.

A total of 655 enrolled in the module with over 90,000 logged activities recorded over 6 months. There was no overall difference between the 3 groups in the baseline competency, all scoring below 35%. Sub-analysis demonstrated differences related to professional background. Post-course analysis showed significant improvement for the PPIs, with analysis of the other groups to follow. On-line discussion between the professional groups was limited, and students and interns will be paired to undertake joint prescribing exercises for the next intake.

Online Interprofessional education can effectively facilitate learning for large groups of different professions dispersed geographically. It provides an opportunity for characterising knowledge and learning patterns of healthcare graduates. This data can be utilised to inform curriculum review and methods for improving collaboration. There is no legislative base for pharmacist prescribing in Ireland at present. This study, which provides an evidence base for competence in prescribing, along with the proposed expansion of the module to provide a certificate in prescribing/prescribing sciences, will facilitate policy development in this area.

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34. USE OF AN ONLINE PROBLEM-BASED RADIOLOGY REFERRAL MODULE IMPROVES SAFE RADIOLOGICAL REFERRAL

Muirne Spooner, Nina Marshall, Leo Galvin, Delaney M, Lee N.G, Joanna Pearly and Noel G. McElvaney, Royal College of Surgeons in Ireland

Poor quality radiology referrals can lead to inadvertent radiation exposure, inappropriate exams and workflow disruption. An audit of body CT requests at our institution demonstrated minimal improvement in referral quality over the initial 8 months of internship. A practical e-learning radiology referral module (RRM) was conceived to teach appropriate radiology referral.

The module was delivered online with prior and subsequent assessment with simulated radiology requests. A curriculum blueprint determined content with an emphasis on practical issues, including provision of logistical information (referrer contact), clinical detail (notes) and safety issues (contrast allergy). Material was delivered by interactive quiz with provision of feedback and explanations. Absolute criterion standard-setting exercises were employed and detailed marking schemes devised.

The module was successful in addressing practical and safety issues in the simulated setting. On premodule testing only 24% of students noted contrast media contraindications, rising to 59% after the RRM ($p = 0.004$). Similarly notification of MRSA status, pregnancy status and provision of referrer contact details demonstrated significant improvement. The quality of the clinical portions was stable, with good initial scores. Post module testing resulted in an improved overall score, 61% to 75% ($p < 0.0001$).

Medical students lack core knowledge to allow safe radiological referral with little improvement with typical intern experience. This can successfully be addressed via an e learning module with measurable improvements in referral quality, particularly in regard to practical radiology issues. Practical radiology referral issues are not traditionally well addressed in the undergraduate setting or in the workplace but can be taught successfully via an e - learning module.

Teaching Point

- TP Interns demonstrate minimal improvement in the quality of their radiology referrals in their first 8 months of work;
- TP Medical students are unaware of many of the practical issues pertinent to radiological referral;
- TP Interactivity and summative assessment generate the most interest for students.

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35. AN E-MATRIX APPROACH TO INTEGRATING TECHNOLOGY FACILITATED LEARNING

Anne Walsh and Paul Gormley, National University of Ireland, Galway

Within education provision, technology enhanced learning (TEL) has extended the ways in which distance learning programmes are managed and experienced. This includes the way content is delivered, the methods by which students are supported, communication between students, administrators and tutors and the ways in which students engage with learning. Within the Open Learning Centre, NUI Galway, technology such as offered by the learning

management system Blackboard promises not only to optimise the management of programmes, but to enhance distance learning student engagement and learning experiences.

A review of literature suggests that a phased process of implementation of technology into programme management offers the optimum chance of acceptance and success. The difficulty within a phased approach is balancing the dynamics of programme factors; that is aligning the human factor with the technology factor. One approach that can support successful implementation is the eMatrix plan. Mapped onto established practices it offers to provide effective and efficient options for programme management and pedagogical approaches.

This case study describes the ongoing integration of Blackboard into the distance learning BA (Training and Education) programme offered by the Open Learning Centre. The integration is guided by a phased process of implementation that draws from the eMatrix approach which specifies a range of programme items including communication to students, course module delivery, tutor/student interaction, student to student interaction, pedagogical approaches, managing assignments and assessments, training for administrators, tutors, students and e-moderators and resources needed. Identifying such items and how they might be managed is worthwhile in ensuring effective and efficient integration of technology into an established programme. Drawing from experiential evidence, the value of the eMatrix in providing indicators as to the phases and level of integration of technology needed for effective implementation is highlighted and discussed to identify the strengths and weaknesses of the approach.

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36. MASTER OF SCIENCE IN PHARMACEUTICAL MEDICINE

Jeremy Whitty, Hibernia College

This presentation details the establishment and delivery of the two year online work based Master of Science in Pharmaceutical Medicine from Hibernia College which was developed in collaboration with Pfizer. The programme which has been described as the “MBA of the pharmaceutical industry” was developed to fill a skills gap in the pharmaceutical and health-care industries and gives international pharmaceutical companies an opportunity to offer a high quality programme which can be delivered to employees, regardless of location.

The programme is aimed at employees in the pharmaceutical and health-care industries and addresses the disciplines essential for industry leaders, providing students with the skills and knowledge required to be effective and productive leaders in today’s challenging pharmaceutical environment. The programme offers a unique and highly relevant learning experience with the flexibility to accommodate work-based learners, allowing them to enjoy the flexibility and accessibility of on-demand, online recorded lectures and live synchronous tutorials.

Hibernia College delivers the programme in conjunction with faculty from Harvard University and the Royal College of Surgeons in Ireland (RCSI) in addition to leading international faculty from industry, medicine and academia worldwide.

Feedback from the students, who are located in more than 30 countries worldwide, has been universally positive with 95% considering the course as highly relevant to their career development and to increasing their understanding of the global pharmaceutical industry.

Hibernia College offers, through this Master of Science in Pharmaceutical Medicine, a richly interactive and highly successful online programme which provides an experience for learners that goes way beyond the limitations of traditional campus-based learning. It is therefore concluded that this Masters programme provides a unique technology enhanced learning experience which serves to benefit all participants with professional development that meets the requirements of the knowledge age.

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37. THE INFOBESITY ISSUE: A WEBINAR ON USING PRODUCTIVITY TO SAVE TIME FOR CREATIVITY

Imogen Bertin, Centre for Adult Continuing Education, University College Cork

If open and distance learning (ODL) is to become integral to higher education institutions, then faculty and administrators need opportunities to acquire new skills for “College 2.0”, in an environment of restricted resources, increased work burdens and heightened uncertainty.

With the help of my colleague Catherine O’Mahony, I piloted a short course for mixed ability adults, including UCC lecturers, to learn “Communication Skills for the New Media Age”. The course materials are available for re-use and repurpose at <http://cnx.org>, and on Moodle by request.

The course aimed to motivate learners by helping them to become more productive with information and communications technology (ICT) in their day-to-day work. This releases time for study and for creativity in adapting materials for ODL or other projects. Communications theory underpinned the content to help participants understand the importance of creating a two-way conversation, rather than one-way information distribution.

One learner spoke memorably about ‘infobesity’, the increasing amount of information which had to be handled each day, blocking time needed for reflection and strategic direction. This webinar focuses on the solutions that we and the learners, working collaboratively from different disciplinary backgrounds, came up with for handling infobesity.

The task of adapting the course for open and distance learning (ODL) is now under way. This has highlighted the problem of course content that requires constant topical update. The instructional design model of the future, regardless of the model of delivery, will be a schema of underpinning theory with sockets, into which small sections of content can be plugged. The material must be carefully constructed to cater for differing learning styles and provide opportunities for collaboration and feedback. This has implications for metadata content tagging and virtual learning environments (VLEs).

38. COURSEWORK ASSESSMENT AND IRRATIONAL PROCRASTINATION

John Considine and David Butler, University College Cork

The importance of transferability, interoperability and perhaps most importantly reusability of learning resources and their role in avoiding duplication of effort, needless repetition and promoting collaboration and sharing has been recognized by scholars (Boyle 2002; Graham 2008). Many Reusable Learning Resources (RLR’s) exist to support information literacy (IL) and librarians worldwide are using such resources to embed IL in their institutions thus instilling vital lifelong learning skills in learners. The goal is to develop learning resources which are reusable, dynamic and flexible and which engage students to learn actively. This paper charts the journey of the Library Network Support Services (LNSS) project- a unique

collaborative effort between the Shannon Consortium libraries of Limerick Institute of Technology, University of Limerick, Mary Immaculate College, Limerick and the Institute of Technology, Tralee. LNSS have developed many hours of online learning for students featuring innovative use of online video, quizzes and practice scenarios with online modules geared towards undergraduates, postgraduates, researchers and academic staff covering such topics as research methods and ethics, referencing, citation and plagiarism, information searching and evaluation and many more. LNSS are in collaboration with 15 other universities to develop Students Study Skills Online a suite of 15 online, multi-media rich courses aimed to help students enhance and develop vital study skills featuring online courses such as academic writing, reading skills, revision and exams and working in groups.

We propose to depict the origin and development of LNSS including elements such as project scoping, marketing and customisation of each suite and rollout of IL training. We will give a practical demonstration of the RLR's themselves. We will also outline our RINGIDEA initiative- an EU collaboration to develop innovative IL initiatives.

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39. UNDERGRADUATE WORK PLACEMENT PROGRAMMES IN IRELAND

Lyndsey El Amoud and Joan Buckley, University College Cork

Paisey (2009) relatively little research has been carried out in this domain. This paper explores the state of non-clinical placement programmes in third level institutes in Ireland. It presents the results of the first comprehensive survey of placement in Irish. The survey reveals the scale and scope of work placement programmes in undergraduate courses in Ireland. With more than three hundred courses incorporated into this survey, it is one of the most wide-ranging studies to ever have been conducted in this field.

This paper's discussion will present contextual information on the number of third level students involved in placement programmes across the country and the types of courses in Irish HEIs (by level and discipline) which include a work placement element in their core structure. It will also identify the accreditation and assessment methods employed for such programmes by Irish HEIs. It presents several of the key obstacles facing undergraduate work placement programmes and their managers as a result of the current changes in the global economic environment. One of the key questions both practically and pedagogically is the nature of alternatives when placements in industry cannot be secured (Smith et al 2007).

In examining work placement programmes in Irish HEIs, this paper will draw on international comparators. In particular it will examine internship programmes in HEIs in the United States, drawing on the learning of institutions who have been engaged in this area for a considerable period of time. Finally, this paper will demonstrate how this form of engagement between education and industry can be mutually beneficial for all key stakeholders involved in work placement programmes, including employers, HEIs and third level students (Richardson and Blakeney 1998). The wide range of benefits - in particular benefits to teaching and learning - which placement programmes can generate for each of these stakeholders will be analysed using comparative data from stakeholder interviews and testimonials.

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40. INTEGRATING INFORMATION RETRIEVAL SKILLS IN HEALTH SCIENCES CURRICULA: FACULTY PERSPECTIVES ON TEACHING, ASSESSMENT AND CONTENT

Kate Kelly, Royal College of Surgeons in Ireland

Irish health policy documents related to the training and education of professionals and policy documents relating the health services delivery cite the necessity of health care professionals having skills and access to information systems in order to practice evidence-based health care. This poster will present the results of a piece of research which explored the relationship between stated desirable skills of practitioners and the education and training they receive in third level health sciences schools in Ireland with an emphasis on information retrieval skills.

To research current practice and attitudes of health sciences educators at third level institutions in Ireland in relation to: teaching information literacy skills to health sciences students of all disciplines; assessing information literacy skills; perceived importance of information literacy skills to the practice of future health care professionals; to identify core information retrieval competencies for health care professionals in Ireland and to make policy recommendations to those responsible for the education and training of health care professionals in Ireland.

Faculty at health sciences schools in Ireland with teaching responsibilities in research methods, informatics or evidence-based practice completed an online questionnaire which asked questions around key concepts, teaching experience, teaching and assessment of information literacy skills; participants were also asked to rate the importance of database, internet, and catalogue search skills; reference and citation management skills; and to identify essential resources that students should be proficient in using.

Information literacy skills are regarded as important and should be taught within the curriculum and assessed. Information retrieval is largely taught by librarians but assessed by faculty; all other skills are taught by faculty. Faculty who teach information retrieval are largely self-taught. Skills are sometimes not taught and are not always assessed. There is lack of understanding about the importance of some skills.

41. THE ARTS IN EDUCATION AS A CATALYST FOR INTEGRATIVE LEARNING

Marian McCarthy, Bettie Higgs and Shane Kilcommins, University College Cork

The Arts provides us with multi-modal, flexible ways of creating and appreciating the world (Veenema, Hetland & Chalfen, 1997). Arts programmes also teach a specific set of skills rarely addressed elsewhere in the curriculum (Bryce-Heath, 1999); these not only relate to the technical and artistic skills of the discipline in question, but also include visual-spatial abilities, reflection, critique and the willingness to experiment and learn from one's mistakes (Winner, Hetland, Sheridan & Veenema, 2007). In an educational context, the Arts provide fruitful entry points to learning and understanding across the disciplines (Gardner, 1999a & b). Founded on the principle that the arts are cognitive and afford distinct ways of knowing (Tishman & Wise, 1999), much of the work of Project Zero at the Harvard Graduate School of Education has its roots in the Arts, which provide powerful ways of making meaning and connect, therefore, with major theories of teaching and learning (Veenema, Hetland & Chalfen, 1998).

This research was conducted as part of the Irish Integrative Learning Project with academic staff who were undertaking the Accredited Programme in Teaching and Learning in Higher Education at UCC in 2009 and 2010. The key research questions asked were: How can the arts in education work as a catalyst to facilitate integrative learning? How and what can engaging in the arts teach us about the process of integrative learning? Participants were invited to visit the Glucksman Gallery and work in interdisciplinary groups to discuss a variety of art works and to reflect on this process as an integrative learning experience. In preparation, they were introduced to the Project Muse and the Entry Points QUEST models of approaching art, as defined in the Project Zero Classroom.

The current paper presents the findings of the research, using thematic analysis.

42. INTEGRATIVE LEARNING, TEACHING AND ASSESSMENT STRATEGY

Tim McLernon, University of Ulster

The argument posed by way of this poster is based on the premise that the teaching, learning and assessment regime that persists in UK undergraduate higher education remains, largely, assessment-led and, probably to a lesser degree, knowledge-consumption-based. Assessment in higher education is a qualitative function which, for summative purposes, is converted to a quantitative outcome. The design of assessment is of critical importance because it shapes the curriculum and guides the teaching and learning processes. The continuing, swift advances in information and communications technology ensure that high quality knowledge and information is freely and readily available to university students. The transfer of knowledge from tutor to student governed by a relatively rigid curriculum with pre-determined learning outcomes is no longer a suitable model to enable graduates to play an effective, innovative and creative role in business and industry, and in society. The business and industry nexus with higher education is a vital one. The professional qualities demanded by employers include the skills and ability to find out things for themselves. This

poster argues for a model learning, teaching and assessment regime in which the focus is at programme level and by which all learning activities are clearly directed towards that which the degree is designed to do. The modules curricula would be driven by research-based learning to encourage a decrease in knowledge consumption and an increase in student-led knowledge production. The curriculum would incorporate, at each level, an elective module in a different discipline to encourage and embed in students the ability to make connections with other disciplinary knowledge and to 'think outside the box'. Industrial placement would be incorporated to integrate programme learning with the demands of the 'real world'.

[Link to Poster](#)

43. INCORPORATING A RESEARCH ELEMENT INTO AN UNDERGRADUATE ENGINEERING LABORATORY

Jenny Ní Mhurchú and Greg Foley, Dublin City University

It is frequently remarked that the modern student has an excellent ability to recall information but cannot think independently and does not show initiative. While the secondary school curriculum is a major factor in this regard, it must be said that large parts of the third level experience perpetuate this problem. However, increased use of active learning, problem based learning and research-based learning should help to encourage independent thinking. In most degree courses in Engineering/Science, a final year project is the first true taste of scientific research encountered by undergraduate students. The final year research project can often prove an extremely daunting task, and the amount of time and effort required by the undergraduate student to settle into this new type of work can be detrimental to the work of the student on core subjects that are assessed by written examination.

We present here the incorporation of real research into an engineering laboratory module taught in the third year of a Biotechnology degree program. This is achieved by challenging the students with a hypothesis to be investigated using the laboratory session, rather than the traditional prescriptive approach resulting in a defined laboratory report. Each laboratory group conducts their experiment using unique experimental conditions and the results are collated into a body of work to challenge the hypothesis presented to the students. The students learn to disseminate their results effectively by including the requirement that the report be constructed in the form of a journal article.

By adopting this approach to teaching in the laboratory, students are introduced at an earlier stage to the skills needed to conduct meaningful scientific research. In particular, it encourages students to evaluate experimental data without bias. By performing experiments for which the outcome is not known in advance, student interest and enthusiasm is significantly increased.

[Link to Poster](#)

44. USING LEARNING GROUPS TO INTEGRATE LEARNING OVER TIME

Patricia O'Sullivan and Anne Mangan, Institute of Physical Therapy and Applied Health Sciences

Integrating the knowledge and skills developed throughout the curriculum with personal and clinical experiences are facilitated through the use of problem-based learning (PBL) groups and peer-group supervision (PGS).

To successfully participate in a learning group, the learner must develop an understanding of group needs and develop an awareness of his/her role within the group. Skills of questioning and feedback are regarded as essential pre-requisites and are developed early in the programme. As the programme progresses, learners are exposed to PBL groups and PGS.

A modified form of PBL is used to challenge students to "learn to learn," and integrate knowledge within their groups to seek solutions to real-world problems. This strategy prepares learners to think critically and analytically, to find and use learning resources, negotiate outcomes and manage conflict. Initial emphasis is on making simple connections among ideas, new knowledge and first level clinical experiences and moving onto synthesizing and transferring learning to new more complex situations within the clinical setting during the final year. Initially problems are well defined and structured for the learner that is new to the discipline. This progresses to less defined problems where the students must integrate knowledge and skills from various resources.

PGS differs from the PBL groups in that the focus is on applying the reflective cycle for the purpose of learning more effectively from experience. In year 1 this is facilitated by the tutors. Year 2 sees the learner begin to take on the role of facilitator but with support. In year 3 this role develops further where learners have an opportunity to facilitate other learners. For summative assessment purposes there is triangulation through tutor, self and peer-assessment.

The use of learning groups assists learners in developing profession skills they will use both in practice and for their own professional development after graduating.

45. UNDERGRADUATE AND POSTGRADUATE MEDICAL STUDENTS ATTITUDES TO PSYCHIATRY PRE AND POST ATTACHMENT

Selena Pillay, F. Sundram, D. Mullins, Naveed Rizvi and K.C. Murphy, Royal College of Surgeons in Ireland

We are currently examining students perceptions of Psychiatry prior to and post their Psychiatry attachment. As the Royal College of Surgeons is the first Medical School to have a stream of Graduate entry Medical Students in Ireland, it offers us an opportunity to examine whether students views of Psychiatry are different depending on previous life experience. We tested the hypotheses that exposure to a clinical attachment in Psychiatry is associated with a positive change in attitude to Psychiatry and graduate entry students exhibit a more

positive attitude to Psychiatry compared to undergraduates before and after the attachment. We also examined factors affecting medical students decisions about Psychiatry.

Students completing their psychiatry rotation in 2008/2009 are given a questionnaire pack before they start their rotation and after their rotation ends. Measures include: General Demographic data, Attitudes to Psychiatry(1) and Ratings of Attractiveness of Career Aspects (2). Ethics approval for this study was obtained from the RSCI Research Committee.

Currently we present our preliminary findings. So far 164 students have participated in the pre-attachment survey corresponding to a response rate of 63%. We have obtained 84 post attachment survey to date. At baseline, total ATP-30 score was 91.8 (S.D. ± 6.2). compared to post-rotation score of 92.0 (S.D. ± 4.7). With regard to ratings of attractiveness of Career Aspects, overall Medicine was found to be the most attractive with a mean score of 1.65 (S.D. ± 0.4).

The literature indicates that attitudes to the specialty can affect recruitment levels. Our preliminary data would suggest that attitudinal change does not necessarily need to take place in order to impact on career preference. However, the data does indicate that Psychiatry is perceived as less attractive when compared to other careers. It is unclear as to whether medical students in training are less attracted to Psychiatry from entry to medical school or whether the medical experience is increasingly deterring interest in Psychiatry.

References

Burra P, Kalin R, Leichener P, et al. Medical Education.1982; 16: 31-38.

Feifel D, Moutier CY, Swerdlow NR. Am J Psychiatry 1999; 456:1397–140.

46. INTEGRATING PHARMACEUTICAL INDUSTRY NEEDS INTO THIRD LEVEL LECTURES

Maeve Scott, Institute of Technology, Tallaght

A career in the pharmaceutical and biopharmaceutical industry is the objective of many science graduates. A module titled Good Manufacturing Practice aims to prepare third year science undergraduates for working in this highly regulated industry.

The module delivery and assessment methods have been designed to familiarise students with good manufacturing regulations while also ensuring students complete tasks typically required by the pharmaceutical industry. Teaching and assessment methods aspire to be active, diverse and inclusive of all learning styles. One third of lectures are practical in an attempt to apply the theoretical syllabus to real life work tasks and help the student recognise the relevance of the module including the legislation. Active learning also aims to improve participation and engagement with a subject which traditionally is very theoretical. Feedback from industry and students with respect to relevance to career opportunities has been positive to date.

This poster outlines how a significant proportion of the learning outcomes of Good Manufacturing Practice module can be achieved through in class generation of the most common documents required in a GMP regulated facility while equipping the science graduate with skills required by potential employers.

[Link to Poster](#)

47. INTRODUCING STUDENT PHARMACISTS TO PROFESSIONAL PRACTICE – THE VALUE OF THE OUT-OF-HOURS VISIT

Judith Strawbridge and A. Morgan, Royal College of Surgeons in Ireland

A substantial number of students embark on a degree in pharmacy without insight into the role of a pharmacist. A novel out-of-trading-hours community pharmacy experience was reported in May 2008 (1). The aim of this study was to further develop this model, allowing students to place their studies in context and gain an insight into the role of the community pharmacist in Ireland.

The student cohort was divided for two out-of-hours visits to a community pharmacy. Subdivision into small groups to allowed for personal interaction with the pharmacist in each of 4 work environments; dispensing prescriptions, pharmacist-supervised medicines, designated consultation area and a general area for discussion of professional issues. The content was mapped to the curriculum for the students to extrapolate curriculum structure to future practice. The pharmacists were briefed on the learning objectives and how the content mapped to the RCSI curriculum.

A response rate of 55% (n = 31) was achieved for the on-line questionnaire conducted to evaluate the exercise. 100% of students who responded found the evening enjoyable and 100% found it useful. 94% agreed that they had learned something new about the role of the community pharmacist, even though 58% had previous work experience. This suggests that a structured placement has benefits regardless of whether the student has previous work experience. Content analysis of the comments gave insight into the value of the visit in meeting the learning objectives.

The structured out-of-hours placement for 1st year student pharmacists is a valuable tool to gain an insight into the challenging and expanding role of the pharmacist and allow the students to relate their curriculum to community practice.

Reference

Smith, I. & Hall, J. (2008). Introduction to community pharmacy: the University of Manchester experience. *The Pharmaceutical Journal*, 17th May, 280, 597-598.

[Link to Poster](#)

48. ASSESSING REFLECTION IN PHYSIOTHERAPY STUDENTS WRITING USING THE ALE REFLECTIVE-TOOL

Jimmy Burke, University of Limerick

Reflection is promoted in health-care professions as a developmental process leading to competent practice. A worksheet called “A Learning Experience” (ALE) has demonstrated a reliable means to assess dentistry students’ reflection on their clinical experiences (Pee et al., 2002). Assessment of Physiotherapy students’ reflections has proven problematic; no study has yet employed ALE with this population.

The objectives are: To determine if students employing ALE on clinical-placement are reflecting and at what depth. Also, to improve understanding of students reflections through insight gained into their reflective process.

A qualitative design using interpretative analysis was employed. Two methods of assessment derived from reflective literature, Johns Questions and Hatton & Smiths criteria, were used to assess worksheets completed by twenty 4th Year Physiotherapy undergraduates. Further in-depth interpretative analysis was undertaken to identify key concepts in students writing.

Hatton & Smiths criteria illustrated most students were reflecting at deep and descriptive levels, with two-thirds of students demonstrating the deepest level of reflection. Students addressing higher numbers of Johns Questions typically exhibited higher levels of reflection than those addressing fewer questions. Johns Questions least frequently addressed involved the perspective of patients and processing new experiences. Additional examination revealed four principal concepts: feelings, evaluation of skills/knowledge, personal insight into practice and learning & personal change, which verified observations from earlier analysis.

Physiotherapy students completing ALE reflected deeply on clinical experiences. Attempts to make sense of their experiences and consider the patient were key factors in the reflective process of students reflecting most deeply.

Reference

Pee, B., Woodman, T., Fry, H. & Davenport, E.S. (2002) Appraising and assessing reflection in students’ writing on a structured worksheet, *Medical Education*, 36, pp. 575–585.

[Link to Poster](#)

49. PEER LEAD TEACHING PROGRAMME, A NOVEL APPROACH AT RCSI

Sinead Cronin, Royal College of Surgeons in Ireland

The Peer-led Teaching Programme (PLT) is an academic student support programme established at the Royal College of Surgeons in 2008 as a platform to develop an effective, enjoyable and accessible learning community.

The PLT programme initially focused on teaching medical students clinical skills and core curriculum based subjects. This year, it has expanded to accommodate four parallel programmes including a Study Skills module and preparation for the United States Medical Licence Examinations (USMLE). These are facilitated through large lecture based learning, smaller tutorial group teaching and one to one sessions.

Thirty six senior clinical students were selected through a competitive application and interview process. Training programmes were provided for the PLTs as appropriate to their programme area. All teaching was monitored by Faculty members to ensure quality of teaching and standardisation. Approximately 400 students attended the programmes ranged from Year 1 to Year 3. Approximately, 200 students provided course evaluation from JC1 to JC3. Feedback was unanimous in demonstrating an overall benefit in concept understanding and exam preparation. The students requested a desire for further 'hands on learning' and suggested that some information may have been too advanced for their level. Requests were also made for an increase in sessional teaching. Enhancing the relationship between PLT and academic staff to develop curriculum needs would also prove beneficial. This feedback will inform constructive change for the coming academic year.

The Peer-led Teaching Programme has allowed students to learn from each other in an informal manner as an adjunct to formal college teaching. The students were given the opportunity to enhance their knowledge and clinical skills as well as building confidence and self-esteem. The programme facilitated the PLTs to reinforce their knowledge and develop teaching skills; a role that they will assume throughout their medical careers. This novel programme has proven to be very successful amongst the student body of RCSI.

50. TEACHING AND LEARNING OF ELECTROMAGNETISM

Leanne Doughty and Paul van Kampen, Dublin City University

At present, an intermediate level Electromagnetism module is offered to Second Year Physics and Electronic Engineering students and to Fourth Year Science Education students. Notwithstanding the diverse educational backgrounds of these students, the problems they encounter appear to be similar. Large gaps in the students' conceptual development in physics and their ability to apply mathematical techniques such as differentiation, integration, and vector calculus have been observed. To address this issue, every lecture is accompanied by two tutorials characterized by Socratic questioning, which the students tackle in small groups. About half deal with conceptual problems; the other half integrate these concepts with the mathematical techniques required to solve intermediate-level problems in electromagnetism.

In this talk, we will discuss our approach to teaching electromagnetism, namely via inquiry-based tutorials, in detail. In particular, we will describe how we build up to the Divergence Theorem from the very basics, showing relevant examples of various exercises completed by students throughout the process. We will outline the pre/post test method that we employ to identify the main problems students have with specific topics in the module, and to measure

the effectiveness of our teaching method. We will also give examples of where results from the post tests have enabled us to make changes to the tutorials.

[Link to Poster](#)

51. DESIGNING TOGETHER: ENABLING FLEXIBLE ACADEMIC PROFESSIONAL DEVELOPMENT PATHWAYS

Jennifer Harvey and Noel Fitzpatrick, Dublin Institute of Technology, Nuala Harding, Athlone Institute of Technology, Marion Palmer, Dún Laoghaire Institute of Art, Design and Technology, Liam Boyle, Limerick Institute of Technology, and Etain Kiely, Institute of Technology, Sligo

One of the 3 objectives of the HEA funded Learning Innovation Network (LIN) project was to scope the parameters of a cross institutionally agreed Academic Development Programme (APD). The development team aimed to recognise the challenges facing many academic staff (new and established) for example: new terminology associated with learning outcomes and curriculum design skills associated with student centred pedagogy and authentic assessment strategies. This new programme also needed to be flexible enough to cater for early career academics, academics with extensive teaching experience as well as academics seeking to combine subject discipline teaching with research interests.

By building upon local specialist areas of expertise, an innovative modular LIN framework for Academic Professional Development underpinned by a set of agreed core values was established. Seven partner IoTs were each commissioned to design and then offer a 10 ECTS APD award. These seven APDs have now been piloted, evaluated and the associated resources shared within the LIN community. These modules offer diverse learning opportunities and pathways in a variety of areas such as problem based learning, assessment, scholarship, technology and mentoring. They have been contextualised within the institute of technology sector to address the specific needs of academic staff and students.

Two additional institutions will be offering these modules from September 2010. For many partners involved in this project, it would not have been possible to offer such a range of accredited short courses without the support of their collaborative partners

This paper will outline the processes and experiences involved in undertaking this work, lessons learned and how we plan to combine these separate awards into a new accredited LIN Postgraduate Award that will be validated and then offered both within individual institutions and cross-institutionally.

[Link to Poster](#)

52. WHO CHOOSES SCIENCE? A STUDY OF THIRD LEVEL UNDERGRADUATE SCIENCE STUDENTS

Sarah Hayes and Peter E. Childs, University of Limerick

Smyth and Hannon (2002) asked the question 'Who chooses science?' in relation to second level. This question needs also to be asked of third level students in science-based courses. This research study examines the factors affecting a student's decision to take third level science-based courses. In particular it examines the influence of taking the Transition Year Programme (TYP) on this decision. Many variables affect a student's enrolment in a Science

course. (Politis et al., 2007) Our work is part of a broader project investigating the place of Science in the TYP, and its effect on students' subject choices and career decisions.

A questionnaire was developed for first year General Chemistry course at the University of Limerick. This module was taken by 400 students from Science, Science Education and Engineering courses. The questionnaire examined what factors were important in influencing the student to take a science-based degree. There was a response rate of 88.75% (N =355) to this questionnaire and the findings were analysed using SPSS 16.0.

The preliminary analysis of the results shows a number of interesting findings. Parental influence towards taking a science-based 3rd level course was the strongest influence for all students ($p < 0.005$), followed by their subject teacher ($p < 0.001$). School type was also significant ($p < 0.001$) in affecting their choice of course, particularly for Engineering and Science students. Just under half the sample surveyed (43.0%) took the Transition Year (compared to 50.7% of the whole cohort), and this has had a significant effect on these students' grades in the physical sciences for the Leaving Certificate, thus impacting on the courses taken by students at third level.

References

Politis, Y., Killeavy, M., and Mitchell, P. I. (2007) 'Factors influencing the take-up of physics within second-level education in Ireland – the teachers' perspective', *Irish Educational Studies*, 26 (1), 39-55.

Smyth, E. and. Hannon, C., (2002) *Who Chooses Science? Subject Take Up in Second Level Schools*, 1st. ed., Ireland: The Liffey Press.

[Link to Poster](#)

53. USING PRACTITIONER RESEARCH TO ENHANCE THE EFFECTIVENESS OF OPEN EDUCATIONAL RESOURCES: UCDOER- AN ADAPTIVE USE OF WIKIS

David Jennings, University College Dublin

Using practitioner research to enhance the effectiveness of open educational resources: UCDOER an adaptive use of wikis

As part of a tripartite research project, UCDOER is the culmination of a programme of action research to provide an open reusable model for academic staff development and support.

Part one dealt with the transformative effect of module re-design. This case study explored the adaptation of a staff development programme as an open learning resource.

Part two analysed the instructional design and produced a model for interaction. A critical review of relevant educational technology required to implement the initiative was also presented.

The final part showcases the finished content within the wiki and gathers end user data. It also points to a sustainable developmental programme for the resource.

Using MediaWiki as a platform, Teaching and Learning at UCD is delivering open educational resources, promoting knowledge construction, encouraging collaboration across faculties, sharing experience and reusing practical examples. The initial offering is aimed at the HE academic community; it offers a series of self-directed sessions and exercises on dealing with

current practice in teaching and learning. Each session enables the end user to capture, reflect, adapt and develop their teaching practice.

The MediaWiki has been adapted to allow individual users reflect and collect their own experiences, in effect providing them with a 'private' collection of their own wiki pages. In this way they may return and reuse the exercises at any point within the academic calendar, or collate their own e-portfolio for academic development.

This paper presents an overview of the project to date and offers a glimpse of the first user interactions and feedback.

54. EVALUATION OF NUMERACY COMPETENCY IN M.PHARM STUDENTS

Helena Kelly and Paul Gallagher, Royal College of Surgeons in Ireland, and Sean Delaney, Marino Institute of Education

Using practitioner research to enhance the effectiveness of open educational resources: UCDOER an adaptive use of wikis

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[Link to Poster](#)

55. INNOVATIVE APPROACHES TO MICROTEACHING AS A PEDAGOGICAL TOOL IN HIGHER LEVEL TEACHER TRAINING: A CASE STUDY OF GMIT, LETTERFRACK

Pauline Logue Collin and Enda Byrt, Galway Mayo Institute of Technology

In 2006 GMIT, Letterfrack launched its first teacher training initiative; a level 8 programme in Design and Technology Education, with the aim of teacher training (for second level) in the technical subject areas. This initiative was followed by the establishment of a Higher Diploma in Education (Technology) in 2009, aimed at students who had previously graduated from GMIT, Letterfrack. With a view to both flexible and innovative practice, both programmes employed different approaches to microteaching. In the former case, local sixth class children were taught in laboratory circumstances in the GMIT, Letterfrack campus. In the latter case, student teachers engaged in the microteaching process, in situ, in a Co. Galway second level school.

The aim of the research was to conduct a comparative analysis of both models of microteaching (described above) with a view to establishing best practice. The context was that of reflective and transformatory practice on the part of the lecturers in Education, GMIT, Letterfrack. An action-research approach was adopted. Primary research methods included semi-formal interviews and focus groups with student-teachers, video analysis of microteaching experiences, informal student-teacher evaluations from the primary and second level pupils, and expert interviews with the second level school principals and co-operating staff.

The research analysis indicated that both approaches facilitated significant learning experiences for student teachers. Differences were identified in relation to the maturational readiness of the student-teacher, demonstration of classroom management skills, and impact upon both student-teachers and second level learners. The research recommends the continued flexible use of both models. It significantly affirms the effectiveness of the GMIT, Letterfrack innovation of training student teachers in the more real environment of the school. It argues for a phased pedagogical approach to microteaching, where learning outcomes reflect a developmental process in teacher training, mirrored in the methodological progression from peer and pupil laboratory microteaching to school-based microteaching.

[Link to Poster](#)

56. RCSI LIBRARY INFORMATION SKILLS TRAINING PROGRAMME AND EVIDENCE – BASED STUDY WORKSHOPS

Gráinne McCabe and Paul Murphy, Royal College of Surgeons in Ireland

The RCSI Medical Graduate Profile includes the following outcome for:

- Demonstrates information literacy skills specifically:
- Recognizes the need for information in given situations.

- Demonstrates the ability to find, critically evaluate, manage and synthesise new information with existing information to create new understanding.
- Demonstrates an understanding of the ethical issues involved in information retrieval and management including the concepts of plagiarism and confidentiality”

Information literacy competencies are inextricably linked to finding the best evidence and therefore essential to practising evidence-based healthcare and to continuing professional development or life-long learning. By equipping students with these skills early in their careers RCSI is equipping them for life.

RCSI Library Information Skills Training Programme and Evidence-based Study Workshops

RCSI library staff have developed a number of “Information Skills Units” to support module specific learning outcomes across the RCSI biosciences schools. These units include learning activities to develop student information skills and being information literate is a specified outcome of the RCSI Medical Graduate Profile.

This poster will focus on Evidence-based Study Workshops which have been developed and delivered in modules within the School of Medicine and the School of Physiotherapy. These workshops have been customised in co-ordination with module administrators and embedded in timetables. This close cooperation between faculty and health sciences librarians has been crucial to the success of the workshops.

Specifically this poster will

- Outline the structure of the workshops, which explore:
 - formulating clinical queries,
 - identifying the type of study appropriate to the clinical question,
 - developing appropriate strategies for a systematic search,
 - deploy methodological filters,
 - assess and appraise results
- Describe how these techniques are practised in a range of databases and clinical reference tools; -Identify the challenges and successes of the Workshop approach
- Make recommendations for replicating this approach.

57. AN EVALUATION OF THE ELF PROGRAMME FROM THE PERSPECTIVE OF BOTH SERVICE PROVIDERS AND SERVICE USERS

Alice McGarvey, Kate Kelly, Ching Leung and Ahmad Saleem, Royal College of Surgeons in Ireland

In response to student feedback the IT Monitors programme was established in 2007 to provide a novel approach to enhance IT support in the RCSI library. This project entailed a peer to peer support programme with monitors drawn from the undergraduate Medical School. The programme was subsequently expanded in 2008 and IT Monitors were renamed ELFs (Electronic Library Facilitators) with a competitive application process open to the Schools of Physiotherapy and Pharmacy and Medicine. The role of these student facilitators was to be available outside of normal working hours to provide IT support and peer to peer support in using electronic information resources available through the library. Training was

provided by the IT Department and Library. ELF's were recruited and paid by the Faculty of Medicine and Health Sciences and over two years their role developed significantly.

The RCSI Student Selected Component is a module where medical students select faculty advertised research projects to be completed over a six week period. This was used as a means to evaluate the ELF programme. An evaluation of the innovative, peer to peer service delivered by ELF's in the library made the project unique in terms of immediate practical application to student and library services. It also offered an effective means of evaluating the programme thereby combining the teaching and learning of research skills to produce a report with recommendations for the future of the ELF programme. The student led evaluation used interview and survey methodologies. The conclusions were that the ELF service was valued amongst the student body. Constructive suggestions for improvement were made most important of which was promotion to increase awareness of the service amongst the student body. This project presents an innovative way in which Faculty and students work together to enhance the educational experience of the students at RCSI.

[Link to Poster](#)

58. CURRICULUM DESIGN FOR TEACHING SIMPLE HARMONIC MOTION

Eilish McLoughlin and Leanne Doughty, Dublin City University

We have developed research-based curriculum for first-year undergraduate physics students concerning wave motion in Physics. This initiative builds on the conceptual tutorials in introductory physics [1] and extends it to include Simple Harmonic Motion (SHM). The emphasis of these tutorials is not on solving the standard quantitative problems found in traditional textbooks, but on the development of important physical concepts and scientific reasoning skills. In order for meaningful learning to occur, students need more assistance than they can obtain through listening to lectures, reading the textbook, and solving standard quantitative problems. It can be difficult for students who are studying physics for the first time to know what they do and do not understand and to learn to ask themselves the type of questions necessary to come to a functional understanding of the material. Therefore these tutorials provide a structure that promotes the active engagement of students in the process of learning physics. The tutorials comprise of an integrated system of pre-tests, worksheets, homework assignments and post-tests. In a pre-test, students are asked to answer conceptual and mathematical problems prior to taking the tutorial. During a tutorial session, students work together on worksheets that consist of carefully sequenced tasks and questions to guide them through the reasoning necessary to construct concepts and to apply them in real-world situations. The tutorial homework reinforces and extends what is covered in the worksheets. Post-test questions then assess the progress made by the students.

Large gaps in the students' conceptual development of SHM and their ability to apply mathematical techniques such as differentiation and integration have been observed. In this paper, we report on the design, implementation and evaluation of physics curriculum that address these issues.

Reference

L.C. McDermott, P.S. Shaffer et al, Tutorials in Introductory Physics, Prentice Hall, 2002.

59. AN INVESTIGATION INTO CULTURAL CONTEXT AND THE IMPACT UPON THE USE OF TECHNOLOGY

Miriam McSweeney, Galway Mayo Institute of Technology

The use of information technology is accepted as paramount in creating an enhanced teaching and learning environment appropriate for the 21st century. The integration of technology to the teaching process is an important part of future development in teaching and learning. (Cosgrave et al, 2008). It is generally accepted that all teaching takes place in a particular cultural context and as such it is sensible to examine how cultural context impacts on the application of technology.

When examining how we might improve teaching and learning through the application of technology it is incumbent upon educators to address the role that organisational culture plays in how we can, or do, utilise technology to improve our practice as teachers or learners. Cole (1996) stated that thinking about culture brings many conceptual tools together in a way that is useful for developmentally oriented research on culture and cognition. Moreover, Cole (1996) and Daniels (2001) posited that through meditational means the individual acts upon and is acted upon by social, cultural and historical factors. This study aims to address the issue of how the cultural context impacts on lecturers' engagement with technology through the appropriation of the Learning Management System (LMS) Modular Object Oriented Dynamic Learning Environment (MOODLE). The study focuses on how MOODLE as a meditational tool shapes and is shaped by lecturers in an educational context taking into account the social, cultural and historical factors. The context for the study was the Galway Mayo Institute of Technology (GMIT), a third level college in the west of Ireland unique in its geographically dispersed multi-campus environment. The technological focus is on the appropriation of MOODLE. The theory underpinning this study is largely driven by the Soviet psychologist Lev Vygotsky (1896-1934). The study draws on aspects of Vygotsky's developmental and cultural psychology, which are relevant to specific educational processes and the social formation of mind. Mediation through tools both technical (such as MOODLE) and psychological (such as language) tools is central to the Vygotskian thesis.

The research initially involved a pilot study at the GMIT's Galway campus and subsequently a focus on their Business Studies school. Twelve lecturers from this school, who reported that they had a very basic knowledge of the use of MOODLE took part in the study. Data were collected through individual interviews and observation.

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60. A STRUCTURED PHD PROGRAMME IN DIAGNOSTICS AND THERAPEUTICS FOR HUMAN DISEASE

Helen McVeigh, and Cliona Lyes, Royal College of Surgeons in Ireland

RCSI leads a HRB-funded structured PhD programme in *Diagnostics & Therapeutics for Human Disease* with Beaumont Hospital and Dublin City University. Highlights of this programme include

- taught modules in year 1
- three laboratory rotations in year 1
- choice of PhD project
- overseas / industry placements
- professional skills training throughout

The areas of research are: Respiratory Medicine, Neuro/psychiatric Disorders, Molecular Endocrinology / Cancer, Cardiovascular Disease, Bioengineering & Regenerative Medicine, Structure Based Drug Design, Biomedical Diagnostics.

Applicants in any bioscience area, chemistry or engineering are eligible. The programme is overseen by a Director and Steering Committee supported by 40 PIs. This type of structured PhD is likely to become the standard format.

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61. THE OBSTETRICS AND GYNAECOLOGY MOODLE SITE – ‘THE POSTER-CHILD FOR THE OTHER DEPARTMENTS AT RCSI’?

Ruaidhrí McVey, E. Clarke and F.D. Malone, Royal College of Surgeons in Ireland

In 2006 Moodle was introduced to the Department of Obstetrics & Gynaecology at RCSI. 1036 students have since passed through the course to date. The Department of Obstetrics and Gynaecology were one of the first adopters of this technology. Each year we have developed the course following an analysis of student on line activity and correlations between moodle based assessments and end of year exam results.

Students [n=229] of the 2010 class were asked to fill in a web based assessment on their experience of Moodle in the Obstetrics & Gynaecology course. The high response rate, 76%, [n=176], representing 26 different nationalities, was in itself a marker of students interest in the development of the course. 32% of our students are not native English speakers.

We discuss the findings of the web based questionnaire in the context of innovation within the Obstetrics & Gynaecology course delivery, assessment and development. We outline the features which have allowed the course be so highly regarded by students. 98% of students polled felt the moodle program useful with their studies. 96% of students found the novel 11 Pre course Tutorial series useful in their preparation for the O&G clinical attachment.

In an effort to blend the on line course with traditional bed-side teaching, we also developed an e portfolio for patients’ histories that students interacted with. We discuss why

only 11% of students believed that the Case Upload OSCE station was a fair way to assess their understanding of the topic they were questioned on.

We explain how Moodle facilitates flexible teaching over four student groups over five different hospital locations. We also discuss some of the negative findings; why almost 50% of students do not want a Moodle based final MCQ & the challenges involved in formalising the continuous assessment of the case uploads even though 60% of students would like this.

62. REFLECTIONS ON THE IMPLEMENTATION OF ENQUIRY BASED LEARNING (EBL) IN BUSINESS DEGREE INFORMATION SYSTEMS MODULES

Ann Murphy, David Murphy and Hugh McCabe, Institute of Technology Blanchardstown

This presentation reflects on the introduction of a hybrid model of Enquiry Based Learning and assessment across a number of existing information systems modules delivered to students at all levels of an Honours Degree Business Course. The approach involves a shift in focus from traditional lecture delivery methods, requiring no student interaction, to one where students are required to take responsibility for their own learning, aided and facilitated by the Lecturer.

An introductory problem to acquaint students with the mechanisms of EBL, and to illustrate the process for working in a large group, is presented together with a number of problem scenarios, each of which is aligned to Learning Outcomes for the individual modules. Student appraisal is achieved by means of a combination of peer and lecturer based individual and group assessment. The research evaluates the effectiveness of EBL as a delivery mechanism from a student and lecturer perspective for these modules, concludes with a reflection on the difficulties encountered and makes recommendations for critical operational requirements essential for EBL implementation.

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63. BRIEF ANALYSIS OF: CULTIVATING EDUCATION FOR LATER LEARNERS IN RURAL ENVIRONMENTS

Karen Murphy-Gallinagh and Ruth Lennon, Letterkenny Institute of Technology

Post Celtic Tiger many previously successful workers find themselves at a loss. With no visible job prospects the thought of returning to formal education seems daunting. Later Learners with little formal education and narrow work experience often discount the value of their life experience. Lack of self esteem combined with fear of modern formal education tools may hinder a return to education. Overcoming such barriers in a time when many find themselves looking for new careers is often intimidating. Antiquated attitudes of higher education being suited only for those of great prospect or those with 'airs and graces' may still prevail. The lack of educational opportunities in the rural environment in comparison to the abundance of availability in more urban environments can also prove a significant barrier. Indeed the anonymity available through the vast wealth of courses in more urban environments may also play a role. Utilising innovative and stimulating educational techniques can help combat the

anxieties of a potential rural later learner. Educators must be creative in developing a portfolio of learning supports adaptable to the personal educational needs of each individual rural later learner. Applying generic andragogy is not often helpful to rural later learners due to cultural diversities. This paper looks at matching specific pedagogical techniques to the rural later learners in both formal and informal education. A representation of the needs of the rural later learner is presented with contrasts from that of the urban later learner also briefly mentioned. A brief analysis of the applicability of general andragogy in this scenario is proffered along with recommendations for further research.

64. DEVELOPMENT OF “TRAIN THE TRAINER” – BLENDED LEARNING PROGRAMME FOR DOCTORS

Dermot O’Flynn, Royal College of Surgeons in Ireland, Katherine Gavin and Ann O’Shaughnessy, Royal College of Physicians of Ireland

The Irish Medical Council core competency of Scholarship states that all doctors should have the ability to teach all senior and junior medical colleagues. Since the introduction of work based assessment methods, it has become increasingly important that trainers are aware of the process of appraisal and assessment in the workplace and are better equipped for teaching, supervising and mentoring.

The overall aim was to develop a blended learning Trainer & Coaching Skills Course to provide doctors with the knowledge and skills to effectively train medical trainees in the clinical working environment. The online course was designed to be completed prior to a one day face to face workshop with participants.

Programme design and development was based on the literature and international best practice. The course curricula took into account competencies frameworks for graduate medical practitioners. Educational resources needed to build the online elements of the course included storyboards, voice over scripts, case studies and expert interviews.

Outcomes for participants include improved knowledge and skills of how to train and coach staff correctly; fulfilment of continuous professional development and competence assurance requirements, and accessible and flexible learning opportunity via e- learning format.

65. PBL GROUP ASSESSMENT AND EVALUATION FOR IRISH AND INTERNATIONAL STUDENTS

Dorel Picovici and Dan O’Sullivan, Institute of Technology, Carlow

The context for this project is the Institute of Technology (IoT) sector and the aim is to research and investigate a new marking model that could be used for group work, together with alternative formative assessment and feedback. The strategy for learning and teaching is based around problem and project based learning. The research project is set in the framework of a third year development project in Electronic Engineering and a third year design brief in Architectural Technology and utilises action research methods. The Electronic Engineering project runs continuously over the whole academic year while the Architectural

Technology studio projects are divided into three, with two (projects) before Christmas and one (thesis) after.

The poster will present the authors' strategies used to start, run and assess a development project making use of the problem based learning (PBL) approach. The PBL approach has been tailored to suit both the Electronic Engineering and Architectural Technology programmes. In addition to increasing the student's attendance rate and facilitating achievement of intended learning outcomes that is 'greater than the sum of the parts', the conclusions of this research clearly indicate that an appropriately assessed PBL approach will enhance learner's skills in self-evaluation, reflective thinking and critical analysis, key skills that are crucial for a knowledge-based economy.

66. RETAINING WEAKER STUDENTS IN IRISH UNDERGRADUATE SCIENCE PROGRAMMES

Áine Regan, Sarah Hayes and Peter E.Childs, University of Limerick

The increasing percentage of Irish students entering third level education means that many science students do not have an adequate foundation in science. This study is a follow up of work done by Childs and Hayes (2009) on the development of an intervention programme for weak chemistry students.

Due to the success of this pilot programme run for one semester of second year in 2008-09, an expanded study has been implemented in 2009-10, using a similar approach. The programme was developed for the same two groups of students as well as a third group, all of which have been previously identified as weak in chemistry. A pre- and post- diagnostic test of chemical concepts and misconceptions was designed and administered. The tests also included an instrument measuring student attitudes and confidence towards science. The pre- diagnostic concept tests were used to design the content of the intervention programme to meet the students' specific needs. The students were taken in small class groups, rather than large lecture groups.

This new study involves a longer intervention programme running over two semesters and starting in the second semester of first year. The programme involves a blended learning approach, including a combination of face-to-face teaching and learning, as well as online resources and regular formative assessment. The next phase will involve use of an interactive classroom response system and development of student workbooks.

By using a variety of research-based pedagogical techniques it is hoped that these students will be better equipped with the basic chemical understanding that they need for their undergraduate programmes of study, resulting in greater retention.

Initial results from the first semester's intervention show a positive trend in both conceptual understanding and confidence levels in chemistry. It is hoped that the second semester's tutorials will consolidate and increase these gains.

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67. APPLICATION AND ASSESSMENT OF A PROBLEM BASED RESEARCH MODEL TO DEVELOP CRITICAL THINKING SKILLS IN UNDERGRADUATE PHARMACY STUDENTS IN UCC

Katie Ryan, University College Cork

This research focused on the introduction of self-directed student research into the undergraduate curriculum of the PF4008 module, Novel Drug Delivery Systems for 4th year pharmacy students in UCC. A constructivist approach was utilised to actively engage students in their own learning by challenging them to think about experimental design and active research in the lab environment using a problem based practical research model in comparison to traditional lab practicals which can be prescriptive. One of the primary motivating factors for integrating the self-directed research activity was to develop independent higher order thinking by moving learning from lower cognitive skills to higher level skills of application, evaluation, design and analysis. Pharmacists have diverse careers path from clinical evaluation to developing new drug technologies hence there is an inherent need for graduates to be competent to research, assimilate and integrate information (both existing and new), apply it to trouble-shoot and logically solve problems that readily arise during ones profession.

As part of the self-directed projects students were assigned research questions that reflected the focus of current research and which were in line with the module theme (Novel drug delivery). Students worked in small groups and were required to investigate the research question (problem), examine prior knowledge, develop learning outcomes to guide their investigations, design, organise and execute experiments, interpret the data and present their findings. A number of methods were employed including survey instruments, semi-structured interviews and observational methodologies to investigate the impact on student learning.

Students displayed critical thinking through novel design; trouble-shooting and analysis. In addition to benefits in the cognitive and psychomotor domains, a positive impact on the affective domain was observed with students actively taking responsibility, acting independently, taking leadership roles and supporting the generation of a good group dynamic through effective communication and reasoning.

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68. INSIGHTS FROM WESTERN SEABOARD SCIENCE PROJECT – AN IRISH PROFESSIONAL DEVELOPMENT PROJECT 2008-2010

Greg Smith, St Patrick's College, Drumcondra

It can be seen from the international research literature (Goodrum et al. 2000; Harlen & Holroyd, 1997) that primary teachers' confidence, competence and attitudes towards teaching science is a world- wide concern. The literature on how to improve teaching of science focuses largely on two areas (a) support, in the form of professional development (b) improving teacher confidence and competence.

The Western Seaboard Science Project (WSSP) is a two year experimental professional development project for teachers of primary science. It is funded by the Irish American Partnership and the DES. The main aims of the project include:

- Developing a model of professional development in science education with primary teachers in 15 small rural schools
- Investigating the extent to which this model can help bring about improvements in confidence, competence and attitudes among primary teachers where the teaching of science is concerned;
- Investigating the extent to which students' attitudes and levels of knowledge are influenced by changes in teachers.

The WSSP model gives teachers opportunities to: collaborate with their peers, reflect on their pedagogic practice and focus on student learning (Kennedy 1998; Hogan et al 2007). This paper will chart the progress and discuss the key findings of the initiative to date.

69. ASSESSMENT OF PRESCRIBING SKILLS IN UNDERGRADUATE MEDICAL STUDENTS IN FOURTH YEAR OF TRAINING

Muirne Spooner, Judith Strawbridge, Delaney F, Frances Meagher Corrigan and Noel Gerard McElvaney, Royal College of Surgeons in Ireland

Medication errors comprise a considerable component of patient morbidity and mortality. The objective of this study was to objectively determine the prescribing competence of undergraduate medical students.

Fourth year medical students were assessed in a 21 station OSCE. The examination was performed four times during the academic year, with a total of 247 students were assessed. Two sittings of the assessment were randomised to include a prescribing task in each station. The remaining two assessments included clinical theory in place of prescribing. The mean score across all stations in the assessments including prescribing was 41+/- 5.66, compared to a mean score of 72+/- 4.45 in the assessments without prescribing questions. ($p < 0.05$). Sub-analysis of the prescribing questions demonstrated that among the incorrect responses, 36% chose an inappropriate medication, 43% prescribed an incorrect dosage, 43% an incorrect route and 46% an incorrect frequency.

Prescribing competence continues to be sub-optimal in undergraduate medical students. The conclusion is that there is need for vertical and horizontal integration of prescribing teaching.

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70. USE OF A QUESTION-SPECIFIC ALGORITHM DECREASES VARIABILITY IN EXAMINER COHORTS IN WRITTEN ASSESSMENT

Muirne Spooner, Frances Meagher Corrigan and Noel Gerard McElvaney, Royal College of Surgeons in Ireland

We evaluated a question-specific algorithm in the correction of short-note questions (SNQs) and compared variability in marking between essay type questions (EQ) and SNQs.

190 students were assessed. The EQ was corrected by 2 specialists (consultants in that area) and 2 non-specialists. A model answer was provided. Each of the nine SNQs was divided between 2 examiners – 1 specialist, 1 non-specialist. A question-specific algorithm was supplied for each SNQ. Examiners rated the usefulness of the marking schemes using a 5-point Likert scale.

In the EQ, specialists gave a higher grade (54.3 ± 0.9) versus non-specialists (51.5 ± 0.7 , $p=0.01$). There was no difference between specialists' and non-specialists' grades in SNQs (54.5 ± 0.3 versus 55.8 ± 0.3 respectively. 60% of non-specialists described the algorithm as "useful" or "excellent" versus 30% of specialists. 55% of specialists described the EQ model answer as "better" than previous years versus 68% of non-specialists).

We show significant differences between specialist and non-specialist examiners in the correction of EQ but no difference in SNQs, for which question-specific algorithms were provided. The difference may have been due to the contrasting attitudes and thus application of the marking schemes provided.

Use of a question-specific algorithm decreases variability in grades awarded by distinct examiner cohorts.

71. AN INTEGRATED APPROACH TO TEACHING A RETAIL DASHBOARD DEVELOPMENT CASE

Simon Woodworth, Karen Neville and Frédéric Adam, University College Cork

This teaching case reports the development of a Dashboard designed to build a comprehensive picture (view) of an organization's customer-base. After more than 40 years of research focused on enhancing managerial support for decision-making through technology, the observation that, developing IT applications that are truly useful for top management is a highly complex and uncertain task, is still as valid as ever. The resulting Business Intelligence and Data Warehousing system supports the delegation and decentralization of decision-making and control in the organization as top managers have guarantees that their subordinates have access to reliable and timely information. This case demonstrates the utilization of IT (Data warehousing and On-Line Analysis Processing) to aid organizational decision-making through trend analysis, resulting in competitive advantage. Therefore, as a result, closer relationships with customers are developed. Additionally, this case can and is actively used to support teaching in three separate undergraduate and postgraduate programmes, covering Data Warehouse and Business Intelligence development, IT infrastructure issues and finally practical approaches to networking multiple business sites.

About this publication:

In the spirit of the conference theme it was decided to publish the proceedings as an extension of the book of abstracts of keynote presentations, parallel paper presentations and poster exhibitions. The keynote presentations can be accessed via hyperlinks as video recordings. All conference presenters were invited to submit a conference paper and those that have been received to date, in addition to the videos for those papers that were recorded during the conference, can be accessed via a hyperlink at the end of the paper abstract. Authors were encouraged to have their papers peer-reviewed. Where papers have been peer reviewed, this is reflected.

